

DESIGNING AN INTEGRATED WATERFRONT: RESPONSIVE REDEVELOPMENT AT
THE PHILADELPHIA NAVY YARD

by

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B.A. Government
Smith College, 2006

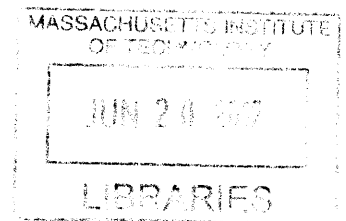
SUBMITTED TO THE DEPARTMENT OF URBAN STUDIES AND PLANNING IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER IN CITY PLANNING
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

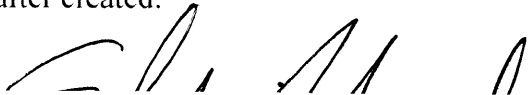

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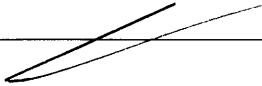
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Submitted to the Department of Urban Studies and Planning on May 24, 2012 in Partial
Fulfillment of the Requirements for the Degree of Master in City Planning

ABSTRACT

Over the past half-century, the physical form and primary purpose of the American urban waterfront has profoundly changed. Due to the combined forces of de-industrialization, globalization, and military restructuring, urban waterfronts have transformed from industrial and manufacturing employment centers to tourist destinations, passive recreation areas, and luxury residential and corporate office districts. The wave of redevelopment efforts has resulted in a general sameness, both in physical design and economic function, across all urban waterfronts. The possibility of an integrated waterfront, in which traditional industrial and manufacturing uses intermingle with spaces for new non-industrial capital investment and public recreation and waterfront access, is the focus of this research.

Using the Philadelphia Navy Yard as its primary case study, this research explores the spatial dimensions of contemporary waterfront planning in a changing economic landscape. The research attempts to answer the following questions: Can a city effectively integrate industrial use, new capital investment, and public open space on its waterfront through specific regulations and site design? Does this form of waterfront redevelopment present a viable and meaningful alternative to the standard development models of the past? Through an in depth study of the Navy Yard's economic development policies and design principles, this thesis argues that such goals are difficult to achieve in the American planning and design process, which prioritizes capital investment over other waterfront functions. Nonetheless, the attempt at integration proves that it is possible to diversify our understanding of the contemporary waterfront and its place in urban development.

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Table of Contents

CHAPTER 1 THE CHANGING FORM OF URBAN WATERFRONTS	7
Waterfront Planning in Context	7
Four Standard Waterfront Forms	11
Case Study Research Method & Thesis Organization	14
 CHAPTER 2 THE NAVY YARD IN CONTEXT	 21
Geography And Historical Significance	21
Base Closure And 1994 Community Reuse Plan	24
The 2004 Master Planning Process And Outcomes	31
Comparative Navy Yard Redevelopment Projects In Boston And Washington, DC	34
 CHAPTER 3 THE WATERFRONT AS EMPLOYMENT CENTER	 41
Tax-based Incentives	42
Cluster Development and Anchor Institutions	47
Creative Class Attraction	51
Residential Development	53
Land Use and Design Implications	55
 CHAPTER 4 THE WATERFRONT AS PUBLIC SPACE	 61
The Pastoral, Passive Public Waterfront	62
The Festive, Recreational Public Waterfront	66
Land Use and Design Implications	71
 CHAPTER 5 Towards an Integrated Waterfront	 79
Revisiting the Research Questions	80
Mitigating Conflicts in Mixed-Use Environments	81
Reconciling Publicly Owned Private Space	84
Designing Edges to Minimize Separation and Uniformity	85
Potential Future Research	91
The Future of the Integrated Waterfront	93
 BIBLIOGRAPHY	 97

Thank You

To Eran and Brent, who provided keen insights and needed encouragement for this thesis and throughout my time at DUSP.

To Lili, who made thesis writing more fun than it had any right to be through her humor, intelligence, and frequent suggestion that we shop our feelings.

To Mom, who not only talked through my concerns and relieved my insecurities, but also read every single draft of this thesis. Thank you.

CHAPTER 1:

THE CHANGING FORM OF

URBAN WATERFRONTS

This research explores the spatial dimensions of contemporary waterfront planning in a changing economic landscape through a comprehensive study of the redevelopment of the Philadelphia Navy Yard. The research attempts to answer two related questions: Can a city effectively integrate industrial use, new capital investment, and public open space on its waterfront through specific regulations and site design? Does this form of waterfront redevelopment present a viable and meaningful alternative to the standard development models of the past? Through an in depth study of the Navy Yard's economic development policies and design principles, this thesis argues that integrating such disparate uses is difficult to achieve in the American planning and design process, which prioritizes capital investment over other waterfront functions. Nonetheless, the attempt at integration proves that it is possible to diversify our understanding of the contemporary waterfront and its place in urban development.

WATERFRONT PLANNING IN CONTEXT

The combined forces of de-industrialization, globalization, and, in some cases, military restructuring over the past few decades have had a profound effect on the spatial organization of American cities. Waterfronts in particular have undergone

significant physical transformation, from industrial and manufacturing employment centers to tourist destinations, recreation areas, and luxury residential districts. For many American cities, the waterfront was the genesis of the settlement; they were locations of production and transportation of goods and essential to the industrial economy of the 19th and early 20th centuries. Economic changes and demographic shifts in the mid-twentieth century fundamentally shifted this purpose. As both industry and residents left the city for the surrounding suburbs, many cities began to use the redevelopment of the waterfront as a visible place for creation of meaning and identity (Marshall 2001, 5). Since that time, academic and professional interest in the redevelopment of waterfronts has grown exponentially, to the point where it is nearly its own discipline within the field of planning and urban design (Malone 1996, 4). Waterfront development literature can generally be divided into two camps: academic studies which analyze the political, social, and economic context of waterfront projects, and more celebratory, illustrated volumes with descriptive articles about particular locations (Desorf and Laidley 2011, 4).¹ Studies of waterfront development also vary as to their adherence to particular theoretical frameworks, including neoliberal or neo-Marxist economic philosophy or New Urbanist design critiques.² The study of the waterfront redevelopment process is therefore not tied to one particular school of thought, but is used to ground the study of different theories and practices of urban redevelopment in a physical place.

The prevalence of academic and professional literature indicates that, over the past half-century, the reclamation of the waterfront has become a familiar site for both public and private

1 Frequently cited academic studies include those by Malone (1997) and Hoyle et al. (1988). The more celebratory works include those by Bruttomesso (1993), Breen and Rigby (1996), and Marshall (2001).

2 Desorf and Laidley's book, for example, takes an implicitly neo-Marxist approach to the waterfront, grounding their study in earlier works by Manuel Castells and David Harvey.

investment in the city. However, over time the form and means of that investment has shifted, mirroring wider patterns in urban development. As Malone argues:

“Neither the factors that have created the opportunities for redevelopment, nor the processes of renewal, fall outside the common frameworks for urban development. In this respect the waterfront is not unique. It is a new (or retrieved) frontier for conventional development processes; albeit that these processes change over time. Both the types of development and the forms of capital that have colonized the waterfront are common to other parts of the urban structure.”
(Malone 1996, 2-3)

The popularity of the waterfront as a point of analysis is due to it being one of most visible spaces for the manifestation of these political and economic forces (Marshall 2011, 5). Particular waterfront projects, such Baltimore’s Inner Harbor or the London Docklands, have come to symbolize particular means and forms of development, and are referenced frequently in the literature.

The initial waterfront redevelopment projects were a response to both the deindustrialization of the waterfront and the decline of the city’s downtowns. Baltimore’s Inner Harbor, planning for which began in 1965, is widely considered the “first of the modern waterfronts” (Shaw 2001, 163). The redevelopment of the Inner Harbor was primarily a public sector led initiative, in which a centralized city government and a powerful and committed mayor attempted to combat the city’s decline. The Harborplace festival-market and aquarium anchored the development and “embedded the area in local consciousness, and so attracted further development” (ibid) (Figure 1.1). The success of the Inner Harbor, which draws millions of visitors a year, influenced

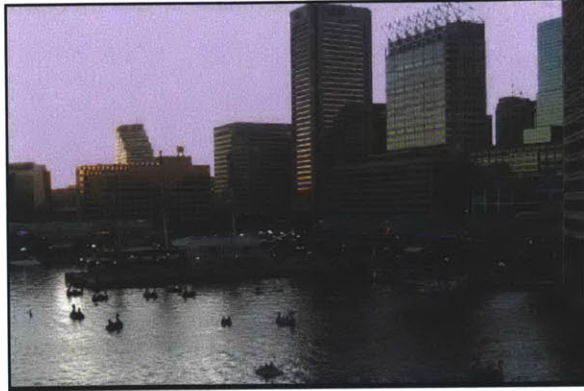


Figure 1.1 Baltimore's Inner Harbor
(By Iracaz CC-BY-SA-3.0 via Wikimedia Commons)

cities across the country and inspired a wave of waterfront projects over the next few decades.

The next phase of waterfront projects attempted to replicate the success of the Inner Harbor, but with a much-reduced role for the central government. The 1980s saw a number of waterfront projects led by quasi-public or wholly private entities that were set up specifically to develop waterfront areas. The London Docklands Development Corporation (LDDC), which oversaw the development of Canary Wharf in London, is perhaps the best known of these (Figure 1.2). While all development projects require a balance of public-sector regulatory power and private-sector financial investment, the post-Baltimore waterfront projects saw that balance shift more towards the latter than the former. These projects reflected neoliberal economic development principles, and rejected the top-down, public sector led efforts that characterized efforts like those in Baltimore just a decade earlier (Shaw 2001, 165). These projects also differed from earlier efforts

in their primary purpose and means for achieving it; earlier efforts used festival markets and other recreational amenities to encourage people to return to the downtown (with the expectation that such activity would entice office and residential development) whereas the LDDC took a much more direct approach to incentivizing business development; it was among the first to use enterprise zones and other tax and financial incentives to lure businesses to the waterfront (Brownill 2011, 125). Even the bankruptcy of the LDDC in the early



Figure 1.2 Canary Wharf, London
(By Diliff CC-BY-SA-3.0 via Wikimedia Commons)

1990s did not lessen the popularity of the quasi-public development corporation (Shaw 2001, 165).

Learning from past efforts, many recent waterfront projects have attempted to blend both public and private roles in the redevelopment and public and private purpose in the site. Massive waterfront projects, like the HafenCity development in Hamburg, boast complete public waterfront access and recreation activities as well as millions of square feet of new residential and commercial development, while being run by large public-private partnerships (Desorf 2011, 2) (Figure 1.3). Indeed, providing space for new capital investment and ensuring a wealth of public open space, trails, and access have both come to be expected characteristics of all urban waterfronts. Yet the working waterfront is still a vital part of the regional economy, as it helps diversify the economic base and provide jobs for a wide range of skill sets. As the expectation for a public, consumption-driven recreational waterfront becomes evermore ensconced in the view of political elites and the public at large, the challenge of maintaining the waterfront as a space of diverse economic activity and programmed space remains.



Figure 1.3 HafenCity, Hamburg
(By San Andreas CC-BY-SA-3.0 via Wikimedia Commons)

FOUR STANDARD WATERFRONT FORMS

Even as the political means for waterfront development have evolved over the past half-century, the forms those waterfronts take have remained fairly static. After examining a wide survey of waterfront conditions, I posit that four standard forms of urban waterfronts currently exist: the forgotten or underutilized

post-industrial waterfront, the industrial working waterfront, the pastoral passive park, and the consumption-driven festive market. These forms have developed either organically through market forces and/or in interaction with deliberate redevelopment planning processes; while there has generally been a progression away from the industrial employment center and the post-industrial wasteland to the pastoral park and festive market forms, these forms do not adhere to a particular timeframe (Breen and Rigby 1996, 20). Most important, these different waterfront forms are almost always completely distinct from one another. For example, little attempt has been made to integrate working waterfront forms with the festive marketplace.

The following figures illustrate the four standard waterfront forms. Each is drawn from one city – Philadelphia – to demonstrate how these forms exist simultaneously but physically separated from one another. The lower Schuylkill River is typical of the forgotten or underutilized post-industrial waterfront model that inspired much of the revitalization efforts of the

past decades (Figure 1.4). While not necessarily wholly abandoned, this waterfront model is characterized by a patchwork of low-value uses, like storage facilities and parking lots, alongside publicly inhospitable uses like refineries and waste incinerators. These waterfronts usually are marked by the infrastructure of past industry, like highways and railroads. Generally considered unpleasant and under-used, when considered at all, the forgotten waterfront nonetheless offers an important element of discovery and potential to city environments. Despite the decades of industrial decline that led to



Figure 1.4 Lower Schuylkill River, Philadelphia (PIDC)

many waterfront redevelopment projects, working waterfronts like the Port of Philadelphia (Figure 1.5) are still sites of industrial employment. This model is used by particular industries – especially shipping and fishing – which are wholly water dependent. They are characterized by particular infrastructure – cranes, railroads, and large dry docks – and activities that exclude public access, even while they remain active spaces for work and economic production.



Figure 1.5 Port of Philadelphia
(Philadelphia Regional Port Authority)

The two other forms are friendlier to public access. The peaceful waterfront path that follows the Upper Schuylkill River in Philadelphia (Figure 1.6) is representative of the pastoral, passive waterfront park model. Its primary purpose is one of tranquil contemplation and waterfront vistas, made possible through modest landscaping, benches and other seating areas, and a meandering path for walking or jogging. The passive waterfront trail has come to be an expected feature any waterfront redevelopment effort, as the waterfront has shifted from a space for production and trade to public access and enjoyment. More active recreation facilities meant for major events can be found at Penn's Landing (Figure 1.7) in Center City Philadelphia. With its large amphitheater, nearby museums and restaurants, and near-constant programming, Penn's Landing is typical of the festival market model of waterfront development. The large-scale public recreation facilities of the festival waterfront are frequently used to spur development of residential and commercial activity around it. Like



Figure 1.6 Schuylkill River Banks Park
(By Jeffrey M. Vinocur CC-BY-SA-2.5 via Wikimedia Commons)



Figure 1.7 Penn's Landing
(Delaware River Waterfront Corporation)

the passive waterfront park, this model has become ubiquitous, generating a sameness of look and feel across many different types of cities.

The persistent replication of these four models from place to place may have exhausted the inherent possibilities of each; a new synthesis is beginning to be pursued that seeks a more diverse understanding of what the waterfront can be. I propose a new model, one I call the integrated waterfront. The integrated waterfront blends elements of the forgotten, working, open, and festive waterfront

models to create a whole that is greater than the sum of its parts. This is not just a matter of promoting mixed-use developments, whereby the waterfront becomes a backdrop for high-density commercial and residential development for a specified range of users. The integrated waterfront model repurposes the divergent advantages of the waterfront site across a range of uses and amenities. In this way it offers the possibility of a sustainable economic development model with a positive and unique city-specific identity. While cities and states have put forward policies intended to retain industrial maritime uses on urban waterfronts (such as the Designated Port Areas in Massachusetts or New York City's recent adoption of the Vision2020 plan), very few examples exist of the integration of multiple uses on a single waterfront site. The Philadelphia Navy Yard, the primary case study of this thesis, illustrates the challenges to achieving the promise of this model.

CASE STUDY RESEARCH METHOD & THESIS ORGANIZATION

This thesis is the result of a qualitative study of waterfront planning and design and economic development theory and policy. The secondary literature mentioned in the preceding sections and in the following chapters provided the theoretical underpinnings for a close examination of one particular waterfront redevelopment project. The Philadelphia Navy Yard, a 1,200-acre commercial and industrial campus in South Philadelphia, serves as the primary case study for this research. Decommissioned as a Naval Base in 1996, its ownership was transferred to the quasi-public Philadelphia Industrial Development Corporation (PIDC), which undertook a master planning process in 2004. Currently, the campus is home to 115 companies housed in a mix of newly constructed factories and offices and renovated historic buildings, with additional commercial and new residential development still slated for construction.

The Navy Yard presents a dynamic case for studying multi-functional waterfront spaces, and was chosen for this study for a number of reasons. While not necessarily typical of all waterfront redevelopment projects, the size and scale of the site and the fact that it was entirely publicly owned presents a case in which the City can experiment with a range of waterfront uses and forms. Likewise, the recent timeframe of its transformation allows the consideration of both the successes it has achieved thus far as well as an examination of the ways in which it has adapted the site to changing circumstance. Finally, unlike many waterfront redevelopment projects of recent years, the protection and promotion of industrial uses at the Navy Yard was a central

element of the Plan. By attempting to blend this goal with that of more traditional economic development and public open space provision, the Navy Yard is a particularly interesting example of the potential of the integrated waterfront model.

In studying the Navy Yard, I refer extensively to the 2004 Master Plan and to a series of focused interviews I conducted with six high-level individuals involved in the Navy Yard's development and operation. They are:

- John Grady, President, Philadelphia Industrial Development Corporation
- Mark Seltzer, Director of Management and Development for the Navy Yard, Philadelphia Industrial Development Corporation
- Brian Berson, Director of Leasing and Development for the Navy Yard, Liberty Property Trust
- Graham Wyatt, Principle, Robert A. M. Stern & Associates Architects (Principle designer for Navy Yard Master Plan)
- Joe Hare, Director of Shipyard Operations, Rhoads Industries (Navy Yard tenant)
- Dave Ziel, Chief Development Officer, URBN (Navy Yard tenant)

The interviews were conducted in January and February of 2012 and often involved follow up exchanges over email. The knowledge generated from these interviews was augmented with that gained reading news and opinion articles from local media outlets written over the course of the Navy Yard's development. Finally, my personal observations and photographs from a series of visits I conducted to the Navy Yard in August 2011, November 2011, and February 2012 provide an additional layer of analysis to the case study.

The study of the Philadelphia Navy Yard is organized into three chapters, each exploring a different facet of the Navy Yard's design and development and drawing connections to the wider patterns of waterfront planning in the United States. The next chapter outlines the history of the Philadelphia Navy Yard, beginning with its role as an employment base and regional industrial anchor for much of the 20th century. It explores the political and economic ramifications of the Department of Defense's decision in the early 1990s to close the Naval Base, the City's initial plans for its reuse, and its transfer of ownership to the Philadelphia Industrial Development Corporation (PIDC) in 2000. An analysis of the 2004 Master Plan focuses on the major players in the site's redevelopment, their objectives for the planning process, and the outcomes of those efforts. Finally, the chapter provides context to the efforts in Philadelphia by comparing the objectives and design to similar projects in Boston (the Boston Marine Industrial Park in the recently redeveloped Seaport District) and Washington, DC (the Yards, formerly part of the Washington Navy Yard). The BMIP supports exclusively water-dependent industrial uses and the Yards provides a mix of residential and high-end office space. The two projects, both of which are located on former military bases, are representative of more standard forms of waterfront districts and provide a valuable comparison to the Philadelphia Navy Yard.

The third and fourth chapters go into a deeper analysis of the two major functions that the redeveloped Navy Yard is intended to perform: as a campus-like environment for both industrial and non-industrial businesses, and as a public park providing waterfront access and recreation to the City's residents. These purposes parallel three of four standard waterfront forms

discussed earlier: the industrial employment center, the pastoral open green space, and the consumption-based festive destination. Chapter Three will outline the strategies PIDC has employed to retain and attract businesses to the site. These strategies are discussed in the context of wider patterns of economic development policy in the United States, particularly the increased competition for businesses between and among cities. The chapter concludes with an analysis of the urban design implications of these strategies, specifically the ways in which the different users interact with each other and the physical environment of the site. The fourth chapter follows the same general outline as the third, but focuses on the public spaces in the Navy Yard and how they contribute to the Plan's stated objectives. The site employs a mix of open parkland and trails and more programmed active spaces, some of which have been fully built out and some of which are still in the planning stages. These spaces will be discussed within the context of the accepted waterfront redevelopment paradigm, which emphasizes complete public access. The chapter examines how these public spaces contribute to or hinder the (private) interests of the businesses in the Navy Yard, with a particular emphasis on security concerns and parking and transit issues.

The final chapter assesses the success with which the Philadelphia Navy Yard, as it has been developed thus far, has integrated its industrial uses, new business, and public open space along the waterfront. It examines how much of the development of the site has been a true synthesis of the three typical forms, and how much these forms are still distinct and separate. It also offers some conclusions as to the inherent conflicts of the integrated waterfront model, specifically mixing industrial and non-

industrial uses and promoting both public space and private use in one location. Finally, it offers some projections and recommendations for future waterfront redevelopment efforts that attempt to embrace the integrated waterfront model.

CHAPTER 2:

THE NAVY YARD IN CONTEXT

GEOGRAPHY AND HISTORICAL SIGNIFICANCE

“Of all the institutions of the city, [the Navy Yard] may well have been the most important, and certainly the most overlooked.”

– Buzz Bissinger, *A Prayer for the City*

Located approximately three miles due south of Center City Philadelphia at the confluence of the Schuylkill and Delaware Rivers, the Philadelphia Navy Yard has played a significant role in both United States military history and the economic growth of its city (Figure 2.1). Encompassing nearly 1,200 acres, the Navy Yard occupies almost as much land as the City’s Central Business District and in its heyday was nearly as important for the city’s economic production. Its history as both shipyard and naval base has given the site an unusual mix of architectural and landscape features; the heavy industrial equipment of the shipyard sits adjacent to a line of charming, turn-of-the-century officers’ housing, while the far east end features an abandoned airplane hanger lying next to deserted workers’ quarters overrun with weeds. Unlike the Delaware and Schuylkill River waterfronts that frame Center City, the Navy Yard’s waterfront was rarely seen by most Philadelphia residents. Yet its importance to the city’s economy over the centuries has given it a



Figure 2.1: The Navy Yard within the Context of Southern Philadelphia

special place in the city's identity.

The first shipyard built for the newly established U.S. Navy, the Philadelphia Naval Shipyard (PNSY) was constructed in 1801 at the base of Front Street in the heart of the city. In response to the rapid growth of the city during the 19th century, the shipyard moved to its current location on the swampy League Island in 1871. The remote location and inhospitable environment provided the Navy with a natural security system that was compounded by the city's infrastructure investments over the years. These included the freight rail yard that served the nearby Port of Philadelphia and Interstate 95. While such projects were essential for the growing logistics needs of the industrial waterfront, they also served to further physically isolate the Navy Yard from the activity of the rest of the city.

Despite its physical remoteness, the Navy Yard became a significant part of the city's industrial identity. Situated between the political power of Washington, DC and the financial might of New York City, Philadelphia in the 19th and early 20th Century was an industrial powerhouse. Known as "the Workshop of the World," Philadelphia was a city where things were made. In many ways, the Shipyard represented the pinnacle of the city's production capacity, churning out 119 warships over its almost two-hundred-year history. As the U.S. military expanded during and after World War I, so too did the Shipyard, eventually reaching its peak employment of 58,434 employees during the Second World War (Dorwart 2001, 54). In a book published for the 150th anniversary of the naval base in 1951, Secretary of the Navy Francis P. Matthews wrote, "I have every confidence that one hundred and fifty years from today Americans will repeat

this salute to the Philadelphia Naval Shipyard when it celebrates three hundred years of distinguished service to the fleet and to the nation” (Bissinger 1997, 54).

In just a few decades, however, the Secretary’s confidence in the Navy Yard’s resilience would prove to be wildly optimistic. The latter half of the twentieth century saw a steady decline in both the employment in and the production of the Philadelphia Navy Yard. Particularly following the end of the Vietnam War, the changing nature of U.S. military action and equipment needs led to a reduction in the demand for the services of the Shipyard. This mirrored a larger trend of deindustrialization in the United States that was affecting cities like Philadelphia, that relied on low-skilled manufacturing as its economic base, in profound ways. As factories and plants across the city shut their doors and laid off workers, politicians fought hard to keep the Navy Yard open and in the face of a steady stream of rumors and threats of closure from the Pentagon.

The end of the Cold War marked the death knell for the Navy Yard as a public shipyard and many others like it across the country, as the Navy, and indeed the entire U.S. military, underwent a massive restructuring and downsizing. By 1991, when the Department of Defense recommended that the Philadelphia Naval Complex be closed, the Shipyard was a leader among public shipyards in most measures of efficiency and timeliness. More important to the Philadelphia economy, it was an anchor for an ever-shrinking industrial base, attracting new firms and maintaining the region’s blue-collar workforce. At the time of its closing, the Navy Yard directly provided employment for over 7,000 workers and was indirectly responsible for 36,000 jobs,

\$362.2 million in direct income, and \$113 million in annual state and local tax revenue, according a report commissioned by Pennsylvania Economy League (Dorwart 2001, 218). The loss of jobs and revenue for the region that would result from its closing was potentially catastrophic.

BASE CLOSURE AND 1994 COMMUNITY REUSE PLAN

“The entire process of shrinking the defense establishment down to its right size was very, very anxiety-prone and there was a lot of anger involved.”

- Joe Hare, Rhoads Industries

The closing of the Philadelphia Naval Shipyard was but one small part of a large-scale reduction and reorganization of military bases across the country made in response to the end of the Cold War and changing global security realities of the late 20th century (Frieden and Baxter 2000, v). While previous administrations had attempted to reign in the Pentagon’s budget through eliminating unneeded facilities, those efforts were frequently thwarted by Congressional Representatives more interested in saving jobs in their districts than cutting redundancies in the Department of Defense (New York Times 1985). The fall of the Soviet Union provided the necessary impetus for a comprehensive, politically palatable military base realignment plan. The Defense Base Realignment and Closure (BRAC) Act, passed in 1990, outlined the process by which the politically delicate decisions of which bases to close or reuse would be made. Between 1988 and 1995, a series of BRAC commissions released reports that resulted in the closing of nearly one hundred major domestic military bases

and the realignment or reduction in size of many others (Hess et al. 2001, 11).

The BRAC legislation provided an ostensibly objective and transparent process by which to determine which bases would be closed, as well as a standard set of procedures for the mothballing, disposal, and mainstreaming of military facilities and equipment. Additionally, the Department of Defense's Office of Economic Adjustment offered some funds for environmental remediation and other efforts necessary to bring a military site in line with the rest of the city. Despite these carefully considered procedures, the base closure process was inherently complex and invariably contentious. The closing of the Philadelphia Naval Shipyard was no exception.

The PNSY was selected for closure during the 1991 BRAC round due to the duplication of shipyard functions at other bases on the East Coast, especially the Naval bases in Norfolk and Newport News which had more direct access to the Atlantic Ocean, and the more general goal the Navy had to move 30% of its repair work to private shipyards. The PNSY was also hampered by its inability to perform nuclear overhauls on aircraft carriers, and the fact that funds for the necessary retrofit were unavailable (Hess et al. 2001, 12). The BRAC commission recognized that, despite these shortcomings, the PNSY played an important role for the Philadelphia region and that its closure would not be well received:

“The impact on the city of Philadelphia would be severe, particularly when added to proposed closures of other Philadelphia-area bases. The community believes that this is too large an impact for any single region to bear. If Philadelphia

Naval Shipyard is closed and mothballed, the community stated that it would vigorously pursue legislative relief to force reversion or outleasing of shipyard property to the city.” (Defense Base Closure and Realignment Commission 1991, 49)

The community responded just as it had promised. Protests against the closure focused on both economic and legal justifications for its continued operation (Hess et al. 2001, 15). The economic justifications were well known: the Navy Yard was a significant employer of lower-skilled workers and was anchor for the industrial sector in the city. Its closure would lead to a potentially catastrophic loss of employment in a city that was already struggling economically. Additionally, some argued that the process by which the Philadelphia Naval Complex had been selected for closure was illegal. In fact, then-Senator Arlen Specter undertook a protracted legal case against the BRAC commission that eventually made its way to the U.S. Supreme Court. While Specter’s case was ultimately unsuccessful, it was indicative of the passion with which both citizens and politicians responded to the base closure news.

Even as Senator Specter’s lawsuit was going forward then-Mayor of Philadelphia Ed Rendell set up the Office of Defense Conversion (ODC) within the City’s Department of Commerce. Rendell took a less combative approach to the news of the Navy Yard’s closing than did Specter. Rather than fight against the decision in court, Rendell sought to make the inevitable closure of the PNSY as painless for Philadelphia as possible. To that end, Rendell and his administration focused on removing any impediments to the shipyard’s reuse and ensuring that the rest of the site be redeveloped for new businesses as soon as possible.

In its initial recommendation, the BRAC commission suggested that the shipyard not just be decommissioned and turned over to the City but be mothballed and put out of use entirely. Already facing a city in which vacant industrial land was alarmingly prevalent, Rendell fought hard against adding another 1200 acres to that, especially given the valuable (if slightly out-of-date) shipbuilding equipment it included. Through his lobbying efforts, the Navy eventually agreed to keep the shipyard operational and allow its reuse by the City.

Mayor Rendell charged the Office of Defense Conversion with the task of collecting and synthesizing the city's options for the Navy Yard's repurposing and then producing a Community Reuse Plan that would set forth recommendations for the site's redevelopment. After months of work, the ODC released the Community Reuse Plan in late 1994. Its recommendations were based on two over-arching goals:

- Preserve the level of employment and economic activity currently generated at the shipyard by preserving the industrial capacity of the yard, by converting it to civilian activities and by supporting the creation of new jobs and economic activity
- Develop the excess land and facilities of the yard to further the city's and region's goals of job creation and revenue generation (Hess et al. 2001, 22)

From the very beginning, then, Philadelphia's primary objective for the redevelopment of the Navy Yard was to maintain it as site for employment and economic development. Concerns for public open space, housing, historic preservation, or other forms of reuse were considered secondarily or not at all (Philadelphia Office of Defense Conversion 1994). The Community Reuse

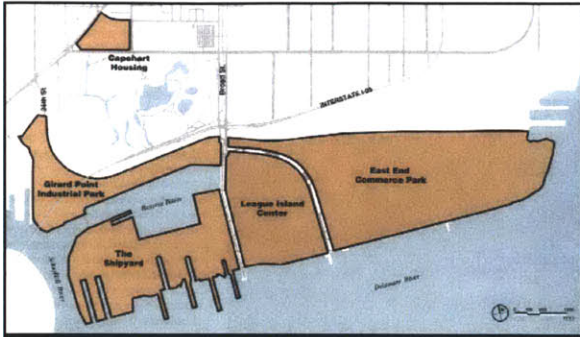


Figure 2.2: Development Plan for League Island
(Philadelphia Office of Defense Conversion 1994, 4)



Figure 2.3: League Island as Industrial Park
(Philadelphia Office of Defense Conversion 1994, 1)

Plan sought to leverage the unique environmental and infrastructural facilities of the Navy Yard to attract specific types of new businesses, including traditional manufacturing firms, research and development activities, start-up companies, and commercial services. The development plan focused on the central portion of the site, assuming that the City would find a private-sector shipbuilding tenant to take over its heavy industrial facilities of the shipyard and that the eastern edge of the site would be developed at a later date (*ibid*) (Figure 2.2). The Plan made no effort to lift the deed restriction the Navy had placed on residential development or to push for public waterfront access or recreation facilities. Rather the Navy Yard was intended to remain a gated industrial park, cut off from the city but providing employment opportunities for its workers (Grady, John 2012) (Figure 2.3).

In 1995, the Office of Defense Conversion became a division of the Philadelphia Industrial Development Corporation (PIDC), the City's quasi-public, non-profit economic development agency (Hess et al. 2001, 20). PIDC occupied a unique position within Philadelphia, as it was a joint venture between the City and the Chamber of Commerce. PIDC was identified as the City's primary agent for the development of the Navy Yard. Given the complexity of the process, PIDC's experience with land management and infrastructure improvements as well as its ability to offer direct financing made it the clear choice to manage the conversion (Frieden and Baxter 2000, 27). PIDC's years of

experience in land reuse and redevelopment distinguished it from other cities' local redevelopment authorities, most of which were formed at the time of a base closure and whose authority was limited to the redevelopment of one site. However, PIDC's responsibilities in the case of the Navy Yard were similar to other local redevelopment authorities charged with base conversion. PIDC functioned as both real estate developer and economic development planner. It was the agency primarily responsible for overseeing the normalization of base property and developing business-attraction strategies (ibid, 43).

The goals of the Community Reuse Plan clearly point to the City's emphasis on maintaining the Navy Yard as an industrial district, ensuring continued employment for its blue-collar workforce. A Master Lease signed in 1994 allowed the city to sublease space to prospective tenants during closure process, and they did seek out smaller firms to move into some existing facilities. The City's primary focus, however, was finding a large firm to take over the west end of the Navy Yard, where the major infrastructure for shipbuilding was located. Between 1994 and 1997, the City took aggressive action to attract a commercial shipbuilding firm to the site. After an unsuccessful attempt to secure a deal with the German shipbuilding firm Meyer-Werft, public officials were able to finalize a deal with the Norwegian construction conglomerate Kvaerner. The deal, signed in 1997, provided nearly \$400 million in public funding for the modernization of the shipyard and job training for shipyard employees. Given the large amounts of public funding provided, local and state politicians made sure to emphasize that the investment would go into permanent improvements to the site and local human capital, as well as the fact that the yard would continue to be

owned by the public (Gorenstein 1997). The money came from the City of Philadelphia (\$60 million), the Delaware River Port Authority (\$65 million), the federal government (\$100 million), and the Commonwealth of Pennsylvania (\$200 million). In return, Kvaerner contributed approximately \$135 million, and agreed to a 99-year lease of the site and promised to provide a certain level of employment for the first 15 years (Marder 1997).

From the beginning, the deal with Kvaerner was criticized for laying only ambiguous and easily avoided obligations on Kvaerner (Hess et al. 2001, 61). Indeed, there was great fear that the deal would be broken completely when, only a few years after the deal was finalized, Kvaerner came near to bankruptcy and had to be sold to another Norwegian shipping conglomerate, Aker. To this day, the shipyard continues to struggle in a changing economy, with Pennsylvania extending Aker a \$42 million loan in February of 2011 in order to assure its continued local operations (Lloyd 2011). Among politicians and business leaders in Philadelphia, there is still a strong effort to maintain skilled industrial jobs at the Navy Yard.

While the Navy Yard was decommissioned in a grand ceremony in 1995, the official transfer of ownership of the Navy Yard to the city did not take place until 2000. The Navy ended up spending over \$300 million to close the Navy Yard. Almost a third of that was spent on workforce-related costs, including pension payouts and worker retraining programs. The rest was spent on selling or otherwise disposing of plant equipment, mothballing unused ships, shutting down facilities, mainstreaming the utility grid, and undertaking environmental remediation of the site. While the Navy has maintained a presence in the Navy Yard in the form

of some research and development initiatives, its role as a major regional employer is over.

THE 2004 MASTER PLANNING PROCESS AND OUTCOMES

“I think when the city and ultimately when PIDC got involved in [asking] ‘what are we going to do with the Navy Yard,’ there was an immediate focus on jobs. This place was always about jobs. It needs to be about jobs.”

- John Grady, PIDC

Between the announcement of the base’s closure in 1991 and the transfer of ownership in 2000, Philadelphia’s primary focus on the Navy Yard’s physical redevelopment was on modernizing the shipyard and securing a tenant for it. After the Kvaerner deal was finalized and the Navy relinquished ownership, however, PIDC’s focus shifted to the development of the non-shipyard portion of the site. As the owner of the site, PIDC responsibilities included both master development (reconfiguring site for civilian use, subdividing base into development parcels, preparing parcels for development, marketing them, and installing or upgrading core infrastructure) and component development (developing sites for specialized uses such as housing or offices) (Frieden and Baxter 2000, vii). In approaching these objectives, PIDC sought to follow the guidelines and site plan established in the 1994 Community Reuse Plan.

In order to facilitate the development process, PIDC released a Request for Proposals for a private-sector developer to partner with them. Out of twelve submissions, PIDC chose Liberty



Figure 2.4: Illustrative Site Plan of the Navy Yard
(PIDC 2004, 4)

Property Trust, a publicly traded real estate investment trust headquartered in the Philadelphia suburbs. Liberty is known for its development and management of office and industrial space, much of it located in suburban business parks. The deal, which originally was only for the development of a 70-acre corporate office park at the entrance to the Navy Yard, quickly expanded into a full partnership between Liberty and PIDC for the development of the entire non-shipyards portion of the site. The result was the Master Plan for the Navy Yard, released in September 2004, which sought to establish an overarching vision for the transformation of the place (Figure 2.4).

In undertaking a master planning process for the Navy Yard, PIDC was shouldering a new responsibility. The agency was known for being opportunistic and transactional in its real estate deals, very rarely engaging in long-term visioning or planning efforts. John Grady, the President of PIDC, credits Liberty with pushing the agency to rethink the Community Reuse Plan and its rather staid approach to industrial development. By the early 2000s when the deal between Liberty and PIDC was established, the economic conditions of the city were better than they were when the CRP was written and the perception (both external and internal) of Philadelphia was improving. Liberty believed that they could push the boundaries of what was expected at the Navy Yard, creating more of a neighborhood and less of an isolated office park. They were the first to suggest the possibility of including residential development in addition to commercial and industrial space.

The resulting document was a significant departure from previous visions of the Navy Yard. The design of the 2004 Master Plan for the Philadelphia Navy Yard was done by Robert A. M. Stern Architects, which had worked with Liberty Property Trust in the past and is perhaps best known in the urban planning field for its work on the planned community of Celebration, Florida developed by the Walt Disney Corporation. In its introductory section, the Master Plan set out four guiding principles for the Navy Yard's development:

1. The Navy Yard should develop, over time, as an urban, mixed-use community, active 24-hours a day and 7 days a week
2. Development at the Navy Yard should capitalize on and enhance the Navy Yard's unique historical building and landscape assets
3. Development at the Navy yard should set a high standard for environmental sustainability
4. Development at the Navy Yard should aim to make the site a regional asset and reopen as much waterfront as possible to convenient public access (PIDC 2004, 4)

These principles present a contrast to the goals outlined in the Community Reuse Plan of 1994 and much of the rhetoric surrounding the Navy Yard's redevelopment since then. In the Master Plan, the Navy Yard is envisioned as responding to multiple needs and desires of the city: for a vibrant, mixed-use community, for a public open space along the waterfront, and for sustainable, environmentally friendly development. It was also much more ambitious than the CRP, depicting significant amounts of residential development and an expensive marina project.

At the time of this writing, PIDC has again partnered with Liberty and Stern to produce an update to the Master Plan in response to the changing dynamics of the Navy Yard and the Philadelphia market. In the years since the Master Plan's release, the Navy Yard has attracted a lot of attention – both from firms looking to invest in the site and from media outlets looking to highlight its transformation. Its success in both industrial and commercial development has prompted PIDC to scale back many of the more ambitious and tangential elements of the original Plan and to refocus on developing office and laboratory space. PIDC's success in attracting businesses to the Navy Yard has had a particularly significant effect on the vision of the waterfront. In the 2004 Plan, the Navy Yard's waterfront was intended primarily for residential use, but is now being thought of as a place for more commercial space. While PIDC still hopes to lift the Navy's deed restriction on residential development, they are focusing on loft conversions and rental units – a more palatable option for both the Navy and the other industrial tenants of the Navy Yard. Significantly, all discussion of including residential uses in the site is justified by the improvements it will offer to commercial and industrial users. Residential development will allow for the small-scale amenities (banks, restaurants, cafes, and dry cleaners), and that will improve the overall character of the site. Even while embracing new uses, then, the Navy Yard is still first and foremost a place of work.

COMPARATIVE NAVY YARD REDEVELOPMENT PROJECTS IN BOSTON AND WASHINGTON, DC

“We looked a whole series of precedents [for the design of the Navy Yard] and none of them is

relevant in every way but we've looked at these because they're relevant in different, individual ways."

- Graham Wyatt, Stern Architects

The preceding sections outline a history of military base reuse and waterfront redevelopment in Philadelphia over the past two decades. This includes the vision for Philadelphia's Navy Yard transitioning from a pure industrial park to a mixed-use neighborhood to something in between: a waterfront that is still primarily for work, but that incorporates elements of public place and residential amenities. In order to place this evolution in context, it is helpful to compare the story of the Philadelphia Navy Yard to similar naval base closures in which the community chose a different path for their waterfront. Both the Boston and the Washington, DC Navy Yards began the conversion process earlier than Philadelphia, but have seen similar reinvestment and re-envisioning in the past two decades. Each is representative of a purer form of waterfront purpose and design, and therefore is a helpful comparison to the integrative approach being taken in Philadelphia.

The Boston Marine Industrial Park is a 191-acre industrial park that lies at the edge of the rapidly developing Fort Point and South Boston Waterfront neighborhoods (Figure 2.5). Purchased by the Department of Defense in the early 20th century to accommodate the expanding workload of the Boston Navy Yard located in Charlestown, the South Boston Naval Annex, as it was then called, played a similar role in Boston's economy as the Philadelphia Naval Shipyard did in its city.



Figure 2.5: Map of Boston Marine Industrial Park (Boston Redevelopment Authority)



Figure 2.6: Design Center at the Boston Marine Industrial Park
(By Tim Sackton from Somerville, MA [CC-BY-SA-2.0, via Wikimedia Commons])

It was used for shipbuilding and repair as well as the manufacture and distribution of a wide variety of military goods. At its peak during World War II provided employment for tens of thousands of people. Post-war economic changes and military restructuring led to the closure of Naval Annex in 1974. The Economic Development and Industrial Corporation (EDIC), a quasi-public agency that has since become part of the Boston Redevelopment Authority (BRA), purchased the area in two agreements with the Department of Defense in 1977 and 1983. Since then the BMIP has had the stated goal of maintaining and promoting it as a

place of maritime and industrial employment for the city.

Most of the BMIP lies within a Designated Port Area, which, under Massachusetts' law, requires that it preserve its maritime industrial capacity. As the BMIP explains on its website:

“The BRA/EDIC is committed to carefully regulating land use at BMIP by actively promoting the development and utilization of waterside parcels for water-dependent use and the development and utilization of interior parcels for compatible industrial use (i.e., non-water dependent uses with direct benefits to the water-dependent activity occurring in the park).”
(Boston Marine Industrial Park 2012)

The result of these statutes is that this section of the Boston waterfront has remained purely industrial in character and use, even as the area around it transforms rapidly (Figure 2.6). Recent infrastructure projects, most importantly the Big Dig which resulted in the new Ted Williams Tunnel linking East

Boston and Logan Airport with South Boston, have served both to improve the commercial accessibility of the BMPI and provide further infrastructural barriers to its public use. Those same infrastructure projects, in conjunction with a recent push from the Mayor and the BRA to redevelop the surrounding neighborhoods of South Boston and Fort Point, have led to a massive investment in new residential and commercial real estate in the area. It will be interesting to see how the BMIP adapts to these changing circumstances, and whether it responds to pressure to become more open and accessible or further walls itself off.

Unlike the Boston and Philadelphia naval bases, the Washington, DC Navy Yard is still an operating federal facility. Located in the southeastern section of the city along the Anacostia River, the Washington Navy Yard was at one point the Navy's largest shipbuilding center. Since World War II, the Navy has consolidated its operations and gradually sold off portions of the site for development by private businesses or transferred them to other federal agencies. Consequently the area has transformed from an industrial district where military weapons were designed and built to a ceremonial and administrative space for the Navy's bureaucracy. Similar to Philadelphia, infrastructure investments in the mid-20th Century, particularly the construction of I-395 and the corresponding displacement of much of the local community, served to divide the waterfront from the rest of the city. In the past decade, the surrounding neighborhood has undergone significant city-led reinvestment, most noticeably the construction of a new Major League Baseball stadium for the Washington Nationals in 2008.



Figure 2.7: Rendering of Anacostia Riverfront at the Yards (<http://www.dcyards.com/>)

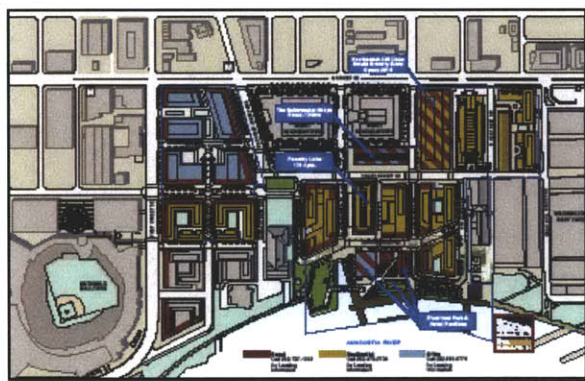


Figure 2.8: Site Plan for the Yards (<http://www.dcyards.com/>)

The Yards, a 42-acre residential and commercial venture currently in development by Forest City Washington and the Capital Riverfront Business Improvement District, is indicative of the larger pattern being promoted along the Anacostia River waterfront (Figure 2.7). A mixed-use development, the plan for the Yards emphasizes public open space, waterfront access, and recreational activities along the river. The site, which was transferred from the Navy to the federal General Services Administration in the 1960s and then from the GSA to Forest City in 2008, sits between the recently completed Nationals Baseball Stadium and the Navy Yard. While construction of the planned 2,500 residential units and 1 million square feet of office space is still underway, the development team and the city recently unveiled the 5.8-acre riverfront park that is the centerpiece of the project (Figure 2.8). The park features a wide, open lawn for passive recreation and will link to the Anacostia Riverwalk, a planned 20-mile waterfront trail that is currently in development. These features, along

with the intended retail, depict a waterfront meant for recreation and consumption.

Undoubtedly there are limitations to the comparison of the experiences in Boston and Washington with those of Philadelphia. The Philadelphia site is considerably larger and suffers from even greater physical isolation than either the Boston Marine Industrial Park or the Washington Navy Yard. Each city has its own history, economic landscape, and specific local institutions

that make the waterfront planning and military base reuse process unique. Yet the decisions made in each case regarding what uses to promote in the redevelopment reflect the values of the community and exemplify the varying formal elements those values take in waterfront design. The Boston case provides a rare example of pure industrial waterfront remaining in a rapidly changing city landscape. The Washington plan is more typical of recent waterfront developments in its blending of pastoral open spaces and consumption-based retail and residential real estate. These projects fall easily into the standard forms of waterfront redevelopment outlined in introductory chapter. The following chapters analyze the ways in which the design and redevelopment of the Philadelphia Navy Yard both adheres to and obfuscates these divisions of use and form.

CHAPTER 3:

THE WATERFRONT AS EMPLOYMENT CENTER

Waterfront development and the Philadelphia Navy Yard exist within a context of wider urban economic development theory and practice that has grown in response to the increase in global economic competition. The previous chapter described the decline of traditional military shipbuilding activity at the Philadelphia Naval Shipyard that coincided with a nationwide decline in manufacturing and heavy industrial production. The resulting closing of the Shipyard led to the decision to transform the site into a waterfront district that would remain a place of employment for the Philadelphia region. PIDC embraced two goals for the economic development of the new Navy Yard: retaining traditional industry (such as shipbuilding and repair, machine and metal fabrication, and manufacturing) and attracting new service-oriented office tenants (including banking and pharmaceutical industries, research and development initiatives from educational institutions, and creative firms). These strategies are very much in line with established patterns and tools of economic development used by municipalities across the United States. However, they have particular consequences for the physical design and development of a large waterfront site like the Navy Yard.

This chapter discusses the strategies PIDC and its partners

have employed to accomplish their development goals for the Philadelphia Navy Yard. Four different strategies for attracting and retaining jobs to the Navy Yard are considered: the use of tax incentives to lure new business to specific locations; the use of cluster theory and industrial anchors to strengthen the remaining manufacturing enterprises in the city; the provision of amenities, such as restaurants and cafes, to attract the “creative class;” and the possibility of including residential uses as a means of encouraging the generation of those same amenities. The final section discusses the implications of these strategies on the design of the built form of the Navy Yard.

TAX-BASED INCENTIVES

As the previous chapter detailed, the effort to attract and retain capital investment in the Navy Yard was from the very beginning a publicly financed undertaking. In order to persuade the Norwegian shipping conglomerate Kvaerner to bring shipbuilding back to Philadelphia, local, regional, state and federal government agencies all contributed public funds to

the shipyard’s rehabilitation and the retraining of employees. Since that time, PIDC has continued to offer both direct and indirect financial incentives to companies looking to relocate to the Navy Yard. In keeping with its role as the site’s redevelopment authority, PIDC has made significant physical improvements throughout the site, including building and improving roads, upgrading electrical and other utilities, and enhancing the landscape through tree plantings and property maintenance (Figure 3.1). These efforts, along with the grants



Figure 3.1: Street Design within the Navy Yard
(Author’s Photo)

for workforce retraining mentioned earlier, are in keeping with traditional means of economic development by public agencies (McGahey 2008, 5).

In recent decades, with increased competition for capital between cities, jurisdictions have taken more aggressive approaches to improve their competitive advantage in business attraction. The most significant change has been the widespread use of the tax system to lower the cost of investment. The Philadelphia Navy Yard employs this approach generously. Offering tax credits, tax abatements, and other fiscal incentives for locating in the Navy Yard, PIDC has embraced a strategy that is not without controversy. The following section outlines the debate over tax-based economic development strategies in the United States broadly, and describes how they are employed at the Navy Yard.

The idea that cities compete with one another for capital investment – and the jobs and tax revenue that come with it – is nearly universally accepted as fact, especially among policymakers at the state and local levels. Even those who dispute the premise of territorial competitiveness and argue that its broad acceptance has resulted in ineffective and wasteful policies acknowledge the fact that because so many municipalities have adopted competitiveness policies, “significant strategic disadvantages accrue to those localities that attempt to opt out of such policies, or to adopt alternatives to them” (Brenner and Wachsmuth 2012, 2). Within this framework of constant competition, localities must continually upgrade their place-specific assets in order to attract businesses. These assets may come in the form of socioeconomic resources, like quality infrastructure or an educated workforce (the traditional tools employed by the public sector to encourage

economic growth). However, in the last thirty years, more and more jurisdictions at both the state and local levels have taken a more neoliberal approach to economic development policy, seeking to lower the cost of investment by offering tax relief to companies that locate within their borders (ibid, 13). Yet the question of whether such incentives induce significant new investment or jobs has not been conclusively answered. In fact, as one recent review of the literature concluded: “there are very good reasons – theoretical, empirical, and practical – to believe that economic development incentives have little or no impact on firm location and investment decisions” (Peters and Fisher 2004, 32).

While the academic literature presents a gloomy picture, it has had little noticeable effect on the use of incentives by states and municipalities. Indeed, incentives are alive and well at the Philadelphia Navy Yard. On its website, PIDC prominently displays a wide variety of state and local incentives businesses can take advantage of by locating in the Navy Yard (PIDC 2011). These include:

- Tax credits (through Keystone Innovation Zone Tax Credits for firms working within particular technology sectors; Historic Tax Credits for the renovation of historic buildings in the site, which is on the National Register of Historic Places; and Research and Development Tax Credits, again offered to firms in the technology industry, especially small start-ups);
- Tax abatements (through the Keystone Opportunity Improvement Zone, and Real Estate Tax Abatements offered by the City); and
- Direct financing and loans at below-market interest rates offered by PIDC.

These incentives are used by a wide range of the Navy Yard’s

tenants, from the metal fabrication firm Rhoads Industries to the clothing retailer Urban Outfitters (Hare, Joe and Ziel, Dave 2012).

Of particular interest for the case of the Philadelphia Navy Yard are tools known as either “enterprise zones” or “empowerment zones.” These tools are meant to direct investment to particularly troubled or difficult areas of the city. As Peters and Fisher point out, enterprise zones should be one of the best forms of economic development, since they target generous incentives at small places. Research, however, does not support this assumption. Often the unfavorable factors that result in an area being designated an enterprise zone are not mitigated by the incentives offered (Peters and Fisher 2008, 31). The Navy Yard is designated as a Keystone Opportunity Improvement Zone (KOIZ), a classification given by the state of Pennsylvania that exempts qualifying businesses from a wide range of city and state taxes, including corporate income taxes, business privilege taxes, and sales and use taxes, until 2018. The Keystone Opportunity Zone program (of which the KOIZ is one particular classification) was developed by the state in the late 1990s to encourage investment in particularly troubled areas. PIDC operates many of the KOIZs in Philadelphia, each of which must be approved the City Council. According to Mark Seltzer, PIDC’s Director of Management and Development for the Navy Yard, there was little controversy in awarding the designation to the Navy Yard, given the City’s strong interest in improving its attractiveness to investors (Seltzer, Mark 2012). Since the Navy Yard’s first KOIZ designation in the early 2000’s, there have been a series of expansions and additions over the years. Today, nearly 1/3 of the Navy Yard enjoys the KOIZ designation, though due to the

particularities of the law, they are not contiguous parcels.

As with other KOIZ sites, the Navy Yard's tax benefits are offered to any business that meets one of the following requirements: it is locating from outside Pennsylvania; it is relocating from within Pennsylvania and increases its employment by 20% within one year; it makes a capital investment in property equal to at least 10% of its previous year's gross revenues; or it enters into a lease with an aggregate payment equal to at least 5% of the firm's previous year's gross revenues. PIDC estimates that these various tax relief opportunities represent a savings of \$10 to \$20 per square foot annually (PIDC 2011). Brian Berson, Liberty Property Trust's director of leasing for the Navy Yard, asserted that there were "absolutely" firms that had come to the Navy Yard specifically because of the tax savings offered. He estimated that 10-15% of businesses with the Navy Yard take advantage of these incentives, but that among Liberty tenants it was closer to 50-60%. This is due to the location of most Liberty properties (almost all of which lie within the KOIZ designated area). Mr. Berson further stated, "I think that there is a market for both tax advantage seekers (who will predominantly come to [Liberty Property Trust] buildings) and non-tax advantage seekers (who may be distributed evenly between me and PIDC) at the Yard" (Berson, Brian 2012). Mark Seltzer confirmed that those taking advantage of the KOIZ benefits are in the far minority of new tenants to the Navy Yard; those that do use it to offset the premium in rents caused by the site's poor soil conditions and high construction costs (Seltzer, Mark 2012). The KOIZ has been a particularly effective tool for attracting tenants to the Navy Yard, perhaps because firms can utilize both the tax incentives it offers and the amenities of the non-KOIZ portions

of the Navy Yard site. Furthermore, the disaggregated nature of the KOIZ within the Navy Yard allows incentive-seeking firms to be integrated among other businesses.

CLUSTER DEVELOPMENT AND ANCHOR INSTITUTIONS

As mentioned in the previous chapter, the Navy Yard has long been an anchor for the industrial and manufacturing sector in Philadelphia. At its peak in the middle of the 20th century, PNSY supported thousands of businesses in the shipbuilding sector (Dowart 2001, 218). Part of the fear that drove the campaign to keep the Yard open in the early 1990s was that the closure would mean not just the loss of jobs at the Navy Yard itself, but also the loss of jobs and businesses that depended on the Navy. This understanding of the complex ways in which institutions, governments, and private firms cooperate with one another to spur economic growth in particular sectors was made famous by Harvard Business School professor Michael Porter's work on cluster theory. Porter defines a cluster as "a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities" (Porter 2000, 16). While much of his work focused on metropolitan or regional clusters, his theories have been applied to smaller city-scale economic development policy. The current resurgence of the Navy Yard as an employment center can to a certain extent be attributed to the way it has nurtured institutions, like the Navy itself. These organizations help to spur related development in the private sector through the synergies that result from physical proximity and cooperative partnerships.

While the Navy is no longer the economic lynch pin for the

Philadelphia region that it was in the mid-twentieth-century, it still plays an important role supporting the industrial sector in the Navy Yard. After the PNSY was decommissioned, the Navy chose to maintain a presence at the site. The Naval Sea Systems Command (NAVSEA) operates a major underwater propulsion initiative that employs almost 2,000 highly trained engineers in advanced research and development. Their research activity is an almost \$1-billion-a-year endeavor that has profound implications for the economic development of rest of the Navy Yard (Grady, John 2012). The Navy's own operations are a significant source of economic activity, and its continued growth is having serious ramifications on the future growth and development of the Navy Yard (which will be discussed in the next chapter). Yet it is perhaps most important as an anchor tenant that attracts and supports many traditional manufacturing firms and high-tech R&D startups to the site.

The story of one business, Rhoads Industries, is indicative of how the Navy's continued presence at the Navy Yard has been instrumental in maintaining the industrial base of the site. Rhoads Industries is a family-owned mechanical construction and metal fabrication firm that was founded in Philadelphia in 1938. At the time of Navy Yard's closing in the early 1990s, the firm was based in North Philadelphia and was doing about \$5 million in annual business. One of the firm's vice presidents, Bruce Nefferdorf, was a retired Naval Warrant Officer and saw the potential for Rhoads to expand into government contracting. The military restructuring that led to the closure of the PNSY and many other bases also resulted in a significant increase in the amount of work the military contracted out to private firms. NAVSEA, the Navy's engineering department, maintained a facility at

the Navy Yard after it was decommissioned. Its primary responsibility was developing the next propulsion system (an electric motor) to allow the heat signature of military vessels to match merchant ships. As Joe Hare, Director of Shipyards Operations for Rhoads Industries and a retired Naval officer himself, put it, “at the time of PNSY’s closing, NAVSEA was a \$40 or \$50m enterprise that acted as an anchor that kept the lights on even in the immediate aftermath of the closure of the base” (Hare, Joe 2012).



Figure 3.2 Nuclear Brine Pressure Chambers in Building 16 (Rhoads Industries)

Nefferdorf recognized that Rhoads could reuse some of the facilities that Navy left, and that the proximity would put the firm in a good position to do business with the Navy. In 2001, Rhoads leased Building 16, a large industrial facility in the shipyard portion of the Navy Yard (Figure 3.2) and started to work along side Northrup Grumman, a major contractor with the Navy. After Northrup turned down PIDC’s offer to buy Building 16, Rhoads bought the building and ended up subleasing it back to Northrup Grumman. This partnership led to Rhoads doing business with directly with NAVSEA and choosing to expand their facilities in the Navy Yard. Eventually they consolidated their operations there in the mid-2000s. As Joe Hare explained, “we’ve created this combined business that generally doesn’t exist in the shipyard industry. We’ve been provided with a transition that has allowed us to put together a multi-faceted business that can do both shipyard work and metal fabrication.” Perhaps most importantly, from the City and PIDC’s perspective, they have been able to grow their company, which employs blue-collar, union workers, from \$5 million a year to nearly ten times that

(Hare, Joe 2012). The unique needs of the Navy and its physical presence at the Navy Yard ensure a continued anchor for industrial employment there. PIDC is pursuing a similar strategy to grow the energy research and development sector through the Greater Philadelphia Innovation Cluster (GPIC), a partnership with Penn State University that is focused on improving energy efficiency (Grady, John 2012).

While the Rhoads Industries case may be considered a success, more public efforts to encourage industrial job growth in the Navy Yard have struggled. The recent difficulties that the Navy Yard's two largest and best-known industrial tenants, Aker Shipyard and Tasty Baking, have faced illustrate the still tenuous position of industrial jobs in the Philadelphia region. Aker continues to struggle to remain competitive in the commercial shipbuilding field; Tasty Baking, a Philadelphia institution, found themselves near bankruptcy after moving their operations to the Navy Yard and constructing a LEED-certified, \$78 million new factory there. Even with the support, both rhetorical and financial, offered by the public sector, not to mention the gleaming new facilities they occupy in the Navy Yard, it seems it seems that successful industrial job creation in the Navy Yard is predicated on the presence of an institutional anchor that is outside the private sector. Whether it is the Navy providing valuable military contracts or GPIC offering inexpensive laboratory space, the retention and growth of the industrial and R&D sectors in the Navy Yard relies on quasi-public institutions supplying the necessary support.

CREATIVE CLASS ATTRACTION

While the image of the Navy Yard as an industrial district remains, the most prominent and successful examples of business attraction there in the past few years have been fairly standard office tenants that have either renovated and reused existing buildings in the site or constructed their own. In a deal announced in the summer of 2011 for example, the pharmaceutical giant GlaxoSmithKline agreed to move its 1,300 Philadelphia-based employees from Center City to newly-constructed office building in the Navy Yard. The move, which GSK said would save approximately \$26 million in real estate costs, was facilitated with a ten-year tax abatement standard for all new construction in the city (Hill 2011). The project did not qualify for many of the other tax credits because it would not be adding jobs to the economy. GSK's move from its downtown location is significant in that contradicts some of Richard Florida's theory on the attractiveness of downtowns for office workers (Florida 2003, 7). As Philadelphia Inquirer architecture critic Inga Saffron noted, "Glaxo's philosophy goes against everything planners have been telling us about the competitive advantages of America's downtowns. Supposedly, they stood to benefit from their high density, good transit links, mouthwatering restaurants and coolness quotient - traits considered essential for attracting talent" (Saffron 2011). The idea that cities should focus on attracting people (rather than firms) by providing certain amenities and an attractive environment is central to Richard Florida's theories on the "creative economy." While Saffron's comment suggests that the Navy Yard does not provide these sought after amenities, in fact PIDC has focused much of its marketing efforts on promoting the image of the Navy Yard as an

alternative downtown, with the same vibrancy and advantages of a healthy city neighborhood. These efforts are part of PIDC's attempt to diversify the type and number of firms that want to invest in the Navy Yard, making it a place that is attractive not only to traditional industrial firms interested in its shipbuilding and manufacturing facilities, but also to firms looking for more standard office space in a "cool" location (Grady, John 2012).

The tenant that has done the most to shape the image of the Navy Yard as one that is both industrial and creative is URBN, the parent company of clothing retailers Urban Outfitters, Anthropologie, and Free People. URBN had been based in Center City Philadelphia since its establishment by a University of Pennsylvania graduate in the 1970s. The company has grown rapidly over the past few decades; by the early 2000s, it occupied a number of different buildings in Center City, with each of its divisions housed separately. The company sought to consolidate its operations, but was having trouble finding office space in Center City that fit their unique culture. (Dave Ziel, the Chief Development Officer of URBN, pointed out that none of the Center City buildings would allow tenants to bring their dogs to work, a point of importance for the young employees of URBN.) At the time they were shown the Navy Yard by their broker, it was still a relatively derelict site, especially outside the shipyard. Yet the numerous abandoned warehouses in the Historic Core presented URBN with the flexible real estate it was looking for to create a unified corporate campus, as well as the tax incentives necessary to realize it. URBN eventually ended up investing over \$150 million into their Navy Yard headquarters and are currently negotiating for the development of five more buildings representing a \$50 million investment. Their historically sensitive

renovation of the warehouses won numerous accolades from the architecture community and landed PIDC and the Navy Yard a wealth of free publicity (Ziel, Dave 2012) (Figure 3.3). While the various financial incentives PIDC offered URBN to become the Navy Yard's pioneer non-industrial tenant were certainly part of the equation, the biggest reason for the move, as Ziel explained, was "that we could create a cohesive culture that fits with who we are and it puts us in an environment that inspires our creativity and ultimately helps our retention of creative people." URBN's efforts to create such an environment (including their operation of a public cafeteria or their renovation of one of the dry docks into a waterfront park) have resulted in the kind of urban amenities that Florida argues are necessary for talent attraction (Figure 3.4). While URBN's contributions are relatively small relative to the whole of the Navy Yard, they are reflective of PIDC's wider strategy for attracting new capital investment.

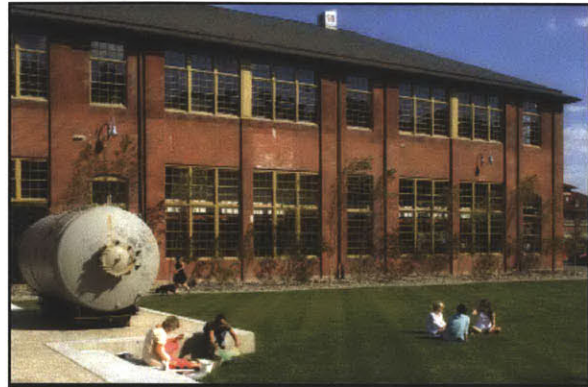


Figure 3.3 Adaptive Reuse of Historic Buildings at the Urban Outfitters Campus (PIDC)



Figure 3.4 The Park at Dry Dock 1, Part of the URBN Campus (Author's Photo)

RESIDENTIAL DEVELOPMENT

One key element of PIDC's plan for encouraging the growth of amenities that attract new firms is their pursuit of residential development within the Navy Yard. The site has a rich history of residential use. During its heyday as a military base, the site contained a variety of residential forms for the military officers and enlisted men who worked there. The charming officers' quarters that line the central streets have since been converted

to offices, and the workers housing on the far eastern edge have been abandoned for decades (Grady, John 2012). Yet when the base closed and ownership passed to the City, the Navy placed a deed restriction against residential use in any redevelopment efforts out of security concerns given the continuing operation of some Naval activities there. In the nearly two decades since that decision was reached, however, the Navy Yard has undergone significant transformation. While residential use was not mentioned as a possibility in the original Community Reuse Plan completed in 1994, it was an important element of the 2004 Master Plan. John Grady has been pursuing the lifting of the deed restriction in earnest for the past few years, and is optimistic that it can be lifted in the next year or so.

The original vision of residential use in the Navy Yard laid out in the 2004 Master Plan included a large marina district filled with a mix of townhouses and condominiums. However, the success PIDC and Liberty Property Trust have had in industrial and commercial business development and attraction has altered the scope and style of residential use. The current thinking is to use relatively small amounts of mainly rental units to spur the development of amenities that will make the site more attractive to the corporations. These amenities – coffee shops, restaurants, and dry cleaners, for example – result from a mix of people using the site beyond the traditional 9-5 work day, but are also demanded based on shifting demographics that Florida identified and John Grady recognizes. As Grady pointed out, “since the early 1990s until now there has been a demographic shift where cities are becoming places of choice for young workers and that is forcing companies to look at cities differently.” While PIDC and Liberty try to court investment from a variety of different

types of firms, they are finding that it is not just a question of financial incentives and adequate infrastructure. Rather, there is also a demand for urban amenities that require a particular blend of uses and have specific consequences for the form of development.

LAND USE AND DESIGN IMPLICATIONS

The Navy Yard's economic development strategies have brought over 100 companies to the site since its conversion, and employment now stands at about 8,000 workers – slightly more than were employed there just prior to the closure (PIDC 2011). While offering tax incentives, supporting institutional anchors, and attracting creative capital are all standard economic development tools, they have specific design consequences in a waterfront business district like the Navy Yard. In considering the design implications of the developments described in the preceding sections, it is worth discussing the evolution of the standard suburban office park that the Navy Yard both emulates and transcends.

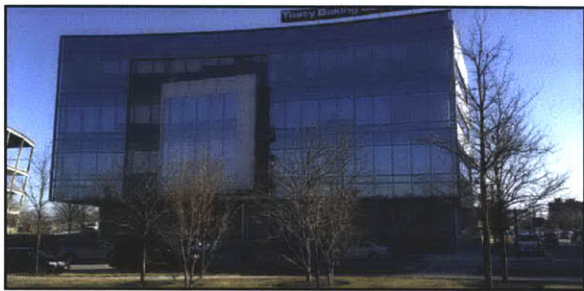
The movement of employment spaces – both industrial and standard office space – from the city to the suburbs followed the growth of large suburban housing developments that sprung up in the 1940s and 1950s. Moving industry from the “dirty” city to the pastoral open spaces of the suburbs was seen as having both sanitary and moral benefits for the environment and workers (Lane 1998, 152). The phenomenon was facilitated by suburban tax structures, new zoning forms, and regional transportation systems (Mozingo 2001, 157). In their layout and design, they differed from earlier urban industrial districts in significant ways:

“[Suburban office parks differed from urban industrial districts] in their reduced site coverage, complete reliance on the horizontal factory, and emphasis on appearance and landscaping. They offered large tracts of inexpensive, developable land with flexibility for expansion and convenient access. Private developers provided infrastructure for parcels large enough for horizontal factories, parking, loading, and ample landscaping” (Lane 1998, 152).

Suburban business districts were initially developed by private interests, either a single corporation looking to develop its own campus or in later years a real estate developer who would sell or lease space to smaller businesses. By the 1980s the scale of office parks increased dramatically, and had shifted from being purely private efforts to having public financial and jurisdictional apparatus supporting them (Mozingo 2011, 186). The Navy Yard clearly bears a resemblance to these suburban business parks in both form (careful landscaping, ample parking, and low density development) and operation (publicly-supported private development).

The suburban business park has become a ubiquitous part of the economic and physical landscape of the urban fringe, and yet its popularity is waning. Cities attempting to grow their economies through physical spaces devoted to employment are rethinking the form those spaces take. John Grady stated, “The suburban office park, as a model, is dying” and argued that in approaching the Navy Yard, PIDC and Liberty Property Trust had to try something else. As he said, “if we were to distinguish ourselves, we couldn’t just build a suburban office park in the city.” The strategy for accomplishing this was to move away from a single purpose space. In redeveloping the Navy Yard, PIDC’s

economic policies sought not only to mix the types of businesses – industrial, commercial, R&D – but also to diversify the uses more broadly by bringing in residential and providing a public waterfront park. The rethinking of the residential component for the update to the Master Plan is especially indicative of the ways the economic goals of the Navy Yard come into conflict with some of initial design ideals. By doing away with the Marina District and encouraging rental units in converted warehouses, PIDC is showing that the primary purpose of the Navy Yard remains employment. The new form of residential planned for the Navy Yard is more palatable both to the commercial and industrial tenants of the site, who would prefer tenants who are not as concerned about noise and the other results of industrial work. Converting abandoned lofts into rental units will also be more attractive to the type of residents PIDC thinks would be interested in the Navy Yard as a place to live – mostly young, educated, fairly transient people who would be intrigued by the mix of uses and might work for the Penn State research facility, one of the technology start-ups, or for URBN. Brian Berson, who acknowledged that they had an easier time with development in Navy Yard than in other sites because of the lack of neighbors, nevertheless stated, “we are anxiously awaiting that [lifting the deed restriction on residential] to happen. The reality is, having neighbors might complicate our work. But it’s worth it.” The worth of the residential is seen entirely in the benefits it will give to the corporate tenants already in the Navy Yard and expected to come in the future. Thus, the decision to move away from a distinct residential district in the way it was portrayed in the initial Master Plan is due to its potential interference with the objectives of the site: the commercial and industrial economic growth of the Navy Yard.



Figures 3.5-8 Architecture from the Industrial, Historic, Corporate, and R&D districts (Rhoads Industries, Author's Photo, Author's Photo, Liberty Property Trust)

PIDC's economic development strategies also have implications for the planned and existing architecture of the Navy Yard. There are four dominant structural forms within the site, each inhabiting its own particular zone: specific industrial machinery and infrastructure in the Shipyard (Figure 3.5); 19th and early 20th century building stock in the Historic Core (Figure 3.6); new construction of "high-design" office buildings in the Corporate Center (Figure 3.7); and planned light industrial/laboratory space for incoming R&D firms (Figures 3.8). These distinct architectural forms correspond to the different industrial and commercial users that the economic development strategies have worked to attract. A company like URBN renovates a series of 19th-century warehouses to their needs, and both enhances its image as a creative firm and encourages other businesses to see the Navy Yard as a unique, innovative location. Tax incentives lure corporations away from Center City, and they construct gleaming glass-and-steel office buildings. The Navy expands its propulsion research activities and demand for laboratory space near their facility grows. In an effort to grow the Navy Yard as an employment center, PIDC and its partners have applied a broad brush to its economic development strategies; this diversity in the policy approach has led to a diversity of architectural forms as well.

While the Navy Yard may be said to be a diverse employment center – certainly more so than the suburban office parks it is seeking to replace – it does not follow that these diverse uses are integrated. The marketing of the Navy Yard gives the impression of it as a diverse neighborhood with a range of types of businesses and other uses. To some extent that image is true; both the industrial and non-industrial commercial tenants are growing, a new hotel is under construction, and there is the promise of residential units and the corresponding small-scale amenities. Yet the site plan of the Navy Yard reveals that these different uses are still kept fairly separate. Each use has its own section of the Navy Yard, which is spatially and formally distinct (Figure 3.9). Dave Ziel of URBN says he sees the Historic Core and URBN’s headquarters as the “real” Navy Yard, whereas the Corporate Center is a separate entity (Ziel, Dave 2012). The site plan thus reveals that in attempting to integrate these disparate uses in one space, PIDC and its partners have not moved as far away from the suburban office park as they would like. The Navy Yard still functions as a suburban-style office park within the city limits, offering open space and flexible workspace with the cache of a waterfront location that is attractive not only to water-dependent manufacturing firms but also to more standard office-based companies. The next chapter concerns the open space of the Navy Yard and the tension between its use as a public waterfront amenity and a privately controlled value-generator for the corporate interests of the commercial tenants that support it.

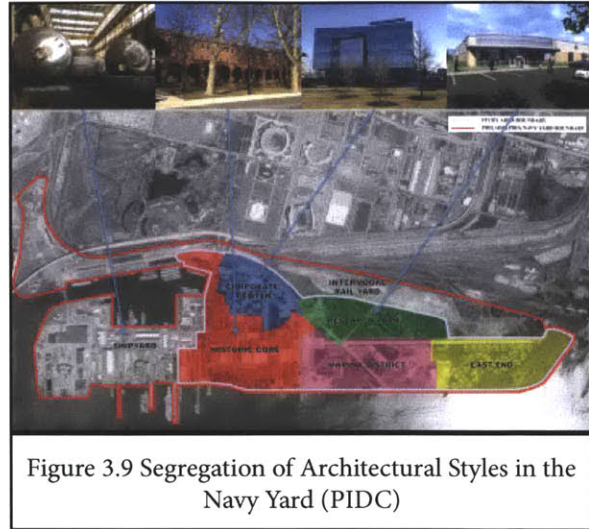


Figure 3.9 Segregation of Architectural Styles in the Navy Yard (PIDC)

CHAPTER 4:

THE WATERFRONT AS

PUBLIC SPACE

Urban waterfront redevelopment efforts of the past half-century, regardless of their scale or purpose, almost universally place an emphasis on public access and public place-making at the water's edge. Yet the idea that the waterfront is a public amenity that should be accessible to the general population is a relatively recent one, historically speaking. As long as the waterfront was primarily a functional element of the city – necessary for trade, industrial production and transportation – it existed somewhat independently of the non-working lives of the city's residents. With changes in the American economic structure over the last half-century, the urban waterfront's industrial purpose has waned while its role in the public life of the city has grown. In the present political climate, any waterfront redevelopment project must have a public access element to it. This is certainly true of the redevelopment of the Philadelphia Navy Yard. While the economic goals described in the previous chapter were and remain the primary rationale for the redevelopment, improving the public space and ensuring access to the waterfront are a significant justification for the project's public investment. One of the eight planning objectives of the 2004 Master Plan was to "craft an integrated system of public open spaces and pedestrian routes, and facilitate public access to the waterfront" (PIDC 2004, 24). This chapter focuses on the public spaces in the Navy Yard

and how they contribute to the Plan's stated objectives.

The Master Plan divides the public spaces of the Navy Yard into two general categories: passive and active (PIDC 2004, 28). These categories align well with two standard models of public open space in waterfront redevelopment projects: the pastoral, passive public waterfront and the festive, recreational public waterfront. Just as the last chapter discussed how PIDC and its partners have employed standard economic development theories at the Navy Yard with particular land use and design implications, this chapter will use these standard models of public open space to explore the ways in which the Navy Yard adheres to and departs from typical waterfront forms. The two models both operate within the context of the accepted waterfront redevelopment paradigm, which emphasizes complete public access. The final section of the chapter explores the ways in which the public accessibility of the Navy Yard comes into conflict with the primary goal of the re-imagined site, which is economic development and job creation, through two central design issues: security and parking. The redevelopment plan of the Navy Yard employs a “campus” concept of public space in which open space is integrated with ongoing enterprises and implicitly supports the populations of those enterprises. As the following analysis reveals, there are few public spaces meant to attract outside populations, thus setting it apart from the typical waterfront park model.

THE PASTORAL, PASSIVE PUBLIC WATERFRONT

The pastoral ideal has existed in American landscape design for over two centuries. Stemming from the aesthetic theories of 18th century Britain, the pastoral is often associated with an

idealization of nature. Pastoral spaces eschew artificial geometry and axes, and are characterized by open fields, unobstructed natural vistas, and uncontrived landscaping (Mozingo 2011, 9). The previous chapter described how this ideal was used in corporate campuses and business parks developed in the mid-twentieth century, but it originally came to prominence in landscape design at the beginning of the century as the primary characteristic of the public park. It was especially associated with Fredrick Law Olmstead and his design for Central Park in New York City. Central Park became a model for many other urban parks, including Fairmont Park in Philadelphia. Olmstead said he wanted to “evoke a familiar, tranquil, and cultivated nature as a counterpoint to the city” (Mozingo 2011, 9). The pastoral ideal was not merely a means for promoting physical beauty, but was also embraced for its supposed beneficial effects on the moral order and spiritual lives of urban dwellers. It was explicitly a counter to the industrialized landscape (ibid). As many formerly industrial waterfronts were redeveloped in the later half of the twentieth-century, the pastoral landscape remained a driving design ideal. In fact, the body of water (lake, river, or bay) was often encompassed in the pastoral landscape. While the industrial users saw the water from a utilitarian perspective, the redevelopment of the waterfront as a public amenity shifted the association of the water from utilitarian to aesthetic.

The idea of the river as a public amenity and part of a beautiful, serene landscape is very much at play in the design of the Navy Yard’s waterfront trail (Figure 4.1). As John Grady pointed out, “the river is a tremendous resource, and the central



Figure 4.1 The Riverfront Trail currently
(Author’s Photo)

principle is to open up access to it.” One of the first landscaping actions was the removal of a ten-foot hedge that the Navy had placed along the waterfront, allowing visual and physical access to the water’s edge (Grady, John 2012). Other elements of the plan also emphasized the waterfront as a central organizing element: streets were extended to the water to allow more and better pedestrian approaches to the water, and the other open spaces in the site were arranged to provide orientation towards the river (ibid). The waterfront is also seen as a primary driver of development; as Brian Berson argued, “the water is a huge part of the appeal of the campus. There is something visceral about [it’s attractiveness].” Yet there is an inherent tension between the vision of the waterfront as part of a serene landscape, and the reality of its use. The waterfront trail does not extend into the shipyard (West of Broad Street), where the water is part of the working landscape, and the view across the river is of oil refineries in New Jersey. Despite their incongruity, the image of the large industrial machinery surrounded by peaceful waterfront park is not without precedent. Indeed the effort to “pastoralize” the industrial landscape by placing it within a natural landscape is closely tied to the dual vision of American life – both powerful and peaceful (Lane 1998, 153). The tension here arises from the public purpose of the waterfront trail abutting the closed-off shipyard. The standard pastoral waterfront model is thus limited by the non- standard mixed nature of the Navy Yard setting.

Like the waterfront trail (which is still under construction), the other major public spaces in the Navy Yard are also characterized by their pastoral, open qualities. The development plan for the Navy Yard organizes the major uses into separate districts, each with its own “green space” to anchor the development. The

open space is the bone structure around which development is organized; in fact, John Grady used Olmstead's Emerald Necklace in Boston as an analogous form. The first major landscaping effort was the Corporate Center green (Figure 4.2), which is placed at the entrance of the Navy Yard. The goal was to put a major open space element at the entrance, both to frame the new development and to send a clear signal that one was entering a new neighborhood (Grady, John 2012). The openness and greenness of the park presents a strong contrast to the large naval vessels and shipbuilding equipment immediately to the west of the entrance; the green lawn is meant to signal that the Navy Yard is a more welcoming place than it was previously (ibid). The quality of the existing environment (including the historic buildings, and especially the maturity of the landscape) helps to bolster the image of a serene, idyllic green space within which commercial development is situated.



Figure 4.2 Crescent Park in the Corporate Center
(Author's Photo)

The transformation of the river from a functional and infrastructural element of the working waterfront to a mostly visual element of the pastoral waterfront has not diminished its potency to spur development. Today, the river not only gives value to water-dependent industrial uses, but also to standard businesses, which benefit from the value generated by the scenery it provides (Ziel, Dave 2012). Liberty Property Trust and PIDC take seriously the potential of the waterfront and the open green spaces to add value to commercial development in the Navy Yard. To that end, they are hiring some of the most prominent landscape architecture firms, like James Corner Field Operations

and Michel Van Valkenburgh, to design the spaces. As Brian Berson stated, PIDC and Liberty Property Trust “are taking the same approach to open space as we do to the buildings, which is: let’s find the most extraordinary talent within reach.”

THE FESTIVE, RECREATIONAL PUBLIC WATERFRONT

While the pastoral waterfront park is common, the most popular form of waterfront development, both as discussed in the planning literature and celebrated in the popular media, is the festive, recreational waterfront. Epitomized by projects like Baltimore’s Inner Harbor or Hudson River Park in Manhattan, this form of waterfront is characterized by its many recreational amenities, both water dependent and not, which draw residents and tourists to the waterfront. These projects often support a wide range of ancillary development, including luxury residential units and high-end office space (Breen and Rigby 1996, 25). As Malone describes below, the festive waterfront differs from the more purely commercially driven project in both its imageability and its political value:

“The emphasis on public open space and facilities is another key factor that may be used to distinguish between developments... the ambitions behind such projects differ from those behind projects driven primarily by economic ambitions or the commercial objectives of the development industry. They may also have a different meaning in terms of the city. Economically, they may be sustained by urban tourism rather than the financial or other sectors of the economy; but they can contribute indirectly to the economic status of the city as a ‘cultural capital’ or resources for urban marketing. They may be imbued with

greater social and cultural significance and, as 'public projects', may accommodate a variety of political ambitions. In this respect, the politics of public facilities, exhibitions, and festivals have added an important dimension to waterfront development. The provision of amenities may be fused with the appeasement or seduction of an electorate." (Malone 1996, 4)

Indeed the image of the festive, recreational waterfront is so popular it has its own political power. While PIDC did not have a particularly difficult time getting the Master Plan for the Navy Yard approved, it is nonetheless telling that the primary image they used to sell the Plan to the public was not of the extensive commercial development planned for the site, but of the Marina District, the most public and recreational element of the proposed development (Grady, John 2012) (Figure 4.3).

The majority of the open, public space in the Navy Yard is un-programmed most of the time. What programming there is consists mainly of one-off events (charity events, outdoor movies in the summer, concerts by the Philadelphia Orchestra, and the culmination of the annual Broad Street Run) that allow the Navy Yard to open itself to the wider public in specific and controlled ways (Grady, John 2012). While these types of events are not uncommon at more traditional festive waterfronts (Penn's Landing also features orchestra concerts and charity events, for example), the design of the site reflects the Navy Yard's ambivalence towards its role as a public destination. Public space is disaggregated, with individual green spaces anchoring particular development areas; there is no central gathering place



Figure 4.2 Illustration of the Proposed Marina
(PIDC 2004, 50)

for large events. Since the release of the 2004 Master Plan, PIDC and its partners have further distanced the Navy Yard from the festive public waterfront model by significantly decreasing the amount of waterfront dedicated to that purpose in the Master Plan update (Wyatt, Graham 2012).

A number of factors have combined to decrease the space given to the festive, recreational public spaces in the Navy Yard. One factor, which can be attributed to the success of the Navy Yard's economic development policies, is the growth of industrial sector (especially the Port of Philadelphia and the Navy), which has constricted the available riverfront space in the Navy Yard. The other is the relatively recent development of recreational waterfronts at Schuylkill and Central Delaware Rivers, which are both located closer to the population center of the city. Both the availability and the demand for festive waterfront amenities have therefore decreased since the release of the 2004 Master Plan.

The best, and arguably only, example of festive waterfront design at the Navy Yard was the original plan for a Marina District included in the 2004 Master Plan. Unlike the other districts of the Master Plan, the Marina District featured a number of uses that would draw people who were not necessarily employees of one of the Navy Yard's tenant businesses to the waterfront; these uses included "an executive conference center, a combination of surface and structured parking, retail space along the Diagonal Boulevard and Riverfront Esplanade, a recreation facility in the former Seaplane Hangar, and a 250-slip marina including on-shore facilities" (PIDC 2004, 46). It also proposed nearly 1,400 residential units in a combination of three to four story townhouses and two-family duplexes. While fundamentally

different in purpose than the industrial and commercial uses found throughout the rest of the site, the extensive amount of waterfront available – nearly 2 ½ miles – allowed PIDC and its partners to plan for a more public and recreational use in one segment of the site.

However, since the Plan's release, both the Navy and the Port Authority have expanded into areas previously meant for the Marina District. The Navy is developing new facilities for its propulsion research laboratory in the western portion of the area and the Port Authority purchased land from the eastern portion for the expansion of its logistics hub. The amount of waterfront available for development – either for a public amenity like the marina or for further commercial development – has thus been significantly constrained. The result is that many of the recreational features and nearly all of the residential development for this portion of the Navy Yard have been abandoned in the update for the Master Plan that Stern & Associates is currently working on. The festive, public waterfront park space, which was a central element of the Plan's initial release, is thus a casualty of the success of the Navy Yard's success as an industrial and commercial business park.

Two design decisions were made in response to these changing circumstances, both with commercial development in mind: the addition of a constructed water feature (a canal) and the shortening of the central diagonal boulevard (Figure 4.4). The canal serves a number of purposes: it functions as a stormwater retention center that will treat runoff from the surrounding parking lots

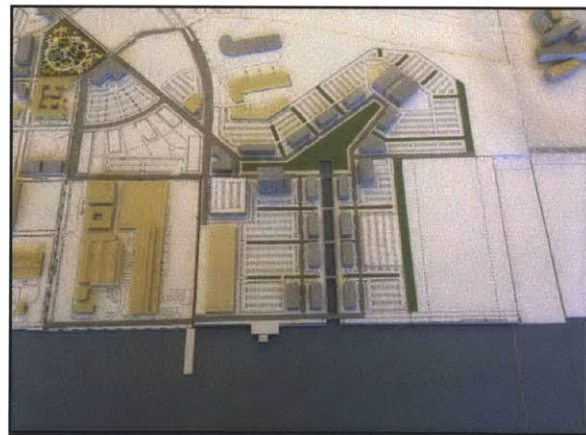


Figure 4.4 Massing Plan for Former Marina District
(Author's Photo)

naturally, releasing the treated water back into the river. It also provides a focus for development away from the riverfront and towards the center of the site. Likewise the diagonal boulevard, which was a prominent feature of the original Master Plan design, has been shorted, terminating at an iconic building (to be constructed). Like the canal, it concentrates the focus of real estate development at the center of the Navy Yard, rather than along the waterfront. The principle public space in the Navy Yard is now no longer at the waterfront but rather more or less at the geographic center of the development area. Both of these design decisions were made with commercial development in mind; without the Marina functioning as a recreational anchor, the purpose of the waterfront has shifted from an amenity for the whole city to a development-driver for commercial interests. It also belies the Navy Yard as a completely waterfront-dependent development. By focusing both public space and commercial development away from the river, the new vision of the Navy Yard relies very little on the water itself for either its purpose or its image.

While some tenants, like Dave Ziel at URBN, regret the loss of the original scheme for the Marina District, others, like Brian Berson welcome the change. As he stated, “the marina district was this romantic, but not well-thought-out residential district in the master plan. It was the wrong density, the wrong planning principles, the wrong everything.” Both Mr. Berson and Mr. Wyatt argue that the goal of the Navy Yard should not be to replicate the high-end residential and commercial enclaves of the Boston and Washington, DC Navy Yard redevelopments; rather the update to the Master Plan should focus on commercial and industrial development, and use residential sparingly as an amenity-driver.

As Mr. Berson put it, they want to make the Navy Yard more like Northern Liberties, a rapidly gentrifying neighborhood north of Center City, which is home to a mix of businesses, boutique stores, and condominiums in converted lofts and rowhouses. For this kind of development, a major recreational public park with surrounding luxury residential units is not needed.

LAND USE AND DESIGN IMPLICATIONS

The preceding sections have described how the public open space at the Navy Yard, both as it was envisioned in the Master Plan and how it has been implemented and adapted, conforms to and departs from two standard waterfront public space models. While the original vision for the site portrayed a balance of pastoral open spaces and programmed recreational amenities, there has been a distinct shift away from spaces that do not serve primarily as a means to add value to (mainly commercial) real estate development. The Navy Yard has become less a public waterfront and more a private office park. Two design and land use elements – security and parking – illustrate the continuing tension between the idea of the Navy Yard as a public waterfront park and the reality of it as a place for private commercial development. Because of its original nature as a secure site, it is perhaps not surprising that the Navy Yard has retained the character of a “gated community”.

The question of the site’s security and exclusivity is one in which the similarities between the Navy Yard and the standard suburban business park are particularly striking. In his essay on the development of industrial parks in the mid-twentieth century, Robert Lane remarks on how part of their value to businesses lay

in their ability to deny access to other uses:

“Within the park, it was possible... to exclude any activity deemed incompatible with industry... Low site coverage and generous setbacks reduced potential conflicts with neighbors beyond the boundaries of the park. Typically, industrial districts had at most two or three points of access and these were clearly articulated as gateways and often guarded. The creation of any kind of through road was studiously avoided.” (Lane 1998, 152-153)

The question of who has access to the site is particularly important when discussing the provision and purpose of the Navy Yard’s public space. The previous chapter discussed the worries some of the industrial and commercial tenants of the Navy Yard felt at the prospect of residential development, due to the potential for conflicts among users. Portraying the Navy Yard as a public waterfront space, especially a heavily programmed public space meant to draw many non-employee and non-resident visitors to the site, has the potential to dramatically increase those conflicts. It is unsurprising, then, that the Navy Yard puts on major events relatively infrequently.

The Philadelphia Navy Yard features both natural and man-made elements that contribute to the site’s exclusivity and security. As discussed in the second chapter, the move of the shipyard from Front Street to the relatively remote League Island was an intentional effort by the Navy to ensure the site was easy to secure. As Joe Hare of Rhoads Industries pointed out, the Navy Yard is a natural enclave and the water on three sides provides a “perfect security system” (Hare 2012). In addition, there are only two entrances by land, the main entrance on South Broad and a second entrance to the west on 26th Street, which is mainly

used by commercial vehicles to access the shipyard and other industrial facilities in that section of the site. The main entrance features a prominent booth at which a security guard is posted (Figure 4.5). The security of the site is seen differently by the industrial tenants and by the development promoters. Joe Hare is happy that, “in order to be here, you need a reason to be here. If they want to, they can increase security at the front gate in a snap. There’s no place else in the city where you can do that” (Hare, Joe 2012). John Grady of PIDC, on the other hand, thinks the security system is gradually “melting away.” He points out that when PIDC originally took over from the Navy, the Navy wanted armed guards manning the entrance, but that PIDC pushed back. The fortress image was not what they wanted to project. Now the booth at the entrance is known as a “visitor service” place, and they only stop people from entering at night and on weekends to combat illegal dumping and vandalism (Grady, John 2012). With such divergent aspirations for the site from its tenants and owners, it is unlikely conflict on degrees of security desired will go away.



Figure 4.5 The Main Entrance to the Navy Yard
(Author's Photo)

The other vital element shaping the public accessibility of the Navy Yard is transportation, specifically the provision of parking and the possibility of subway expansion. One is of course related to either, and both have profound implications for the design, image, and use of the site. Currently, the nearest SEPTA subway stop is Pattison on the Broad Street line, which serves the sports stadia, and is over a mile from the main entrance. It is not surprising, then, that only about 5% of the employees at the Navy Yard commute by transit (Berson, Brian 2012). The vast majority

drives. A study was done in 2008 to determine the feasibility of extending the subway into the Navy Yard, but that possibility is still years from becoming a reality (Parsons Brinckerhoff 2008, 4). In the meantime, Liberty Property Trust has developed a shuttle system that will run every fifteen minutes from the Market East Station, thus connecting the Navy Yard to the commuter rail. The shuttle system was a requirement of Liberty's deal with GlaskoSmithKline, but Mr. Berson anticipates that it will be heavily used by URBN employees. He also is optimistic that the improved connection to downtown will help lure other types of businesses, like law firms, which have been reluctant to move to a site that requires three modes of transit to reach from the suburbs (Berson, Brian 2012). Importantly, the shuttle system is designed primarily for employees coming to the Navy Yard to work. It will operate only on weekdays. Mr. Berson does not anticipate that it will lead to a much higher number of visitors to the site. Without improved transit options, especially for evening and weekend times, it is unlikely that the Navy Yard will become a popular destination for the general public, regardless of the quality or quantity of its public spaces.

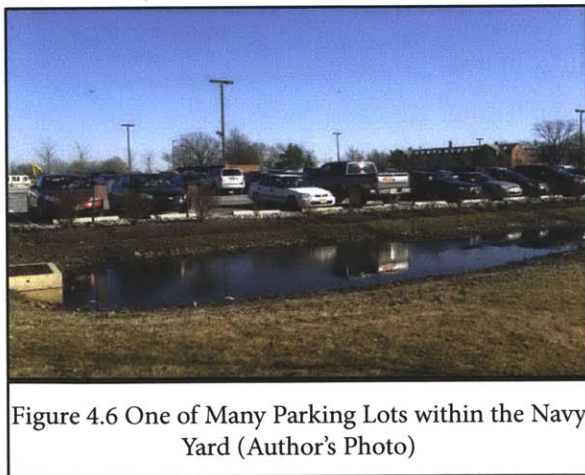


Figure 4.6 One of Many Parking Lots within the Navy Yard (Author's Photo)

Even when the shuttle is adopted, Liberty does not expect to increase the percentage of transit commuters much over 10%. Thus parking will remain a vital element of the site's accessibility (Figure 4.6). Mr. Wyatt acknowledged that the update to the Master Plan is heavily influenced by parking requirements of the new development planned, calling the design of the revised Marina District "a totally parking-driven solution" (Wyatt, Graham 2012). New development in the Navy Yard

requires 3.5 parking spaces for every 1,000 square feet of office space, which is on the low-end of mandates typical of suburban office parks. Interestingly, these minimums are determined not by zoning mandated by the City but by tenant expectations (ibid). In fact, the City has been extremely flexible with its zoning requirements in the Navy Yard. URBN, for example, was permitted to substantially reduce its required parking spaces, and was allowed to renovate a 55,000 square foot warehouse with only 40 parking spaces. Yet Mr. Ziel questioned whether this leniency was appropriate, given that driving is practically the only means for Navy Yard employees to get to work (Ziel, Dave 2012). There is some tension, then, between efforts to encourage development through permissive requirements and the practical necessities of an employment district. In the updated Master Plan, Mr. Wyatt and his fellow designers at Stern have attempted to mitigate some of the negative externalities of the necessary parking (including their unattractiveness and stormwater runoff issues) by incorporating landscaped bio-swales throughout the proposed new surface lots. In a multi-functional place like the Navy Yard, parking itself becomes multi-functional: supplying additional landscaping for the pastoral park, providing necessary access for work, and helping to remediate its own environment impact. Yet the significant space parking lots take up and their primary use for commuters precludes the development of more public open space meant for active recreation.

The 2004 Master Plan outlines ambitious goals for open space in the Navy Yard, acknowledging its value to development, but also committing to open space for public recreation and for environmental protection and remediation. Yet to date, public space development within the Navy Yard has been limited to

that which surrounds new businesses and its design recalls a suburban office park more than an urban destination. Mr. Wyatt admitted as much when he acknowledged that the numerous parks built and planned for the Navy Yard are meant to be used by the employees of the businesses located there; they were not designed primarily as destinations for the wider public. Further illuminating the thought-process behind the scale and design of the public spaces in the Navy Yard, Mr. Wyatt explained:

“One of the challenges of designing these spaces is that they have to be economically viable too, so you have to find some reasonable balance between the capital cost of building them and the value they create from a real estate perspective, and then you also have to think about maintaining them. So although its nice to have parks, what we have tried to do is get the maximum value from the minimum size park” (Wyatt, Graham 2012).

The ongoing development and adaptation of the Master Plan for the Navy Yard reflects the tensions inherent in the integration of multiple waterfront forms and roles: if it is to be primarily a place of work and business, the goal of complete public access and enjoyable public amenities may be difficult to achieve. In many ways, the priorities demonstrated by PIDC when it comes to public space design reflect the demands of the global capital market. PIDC is a quasi-public agency, yet the purpose of the Navy Yard is primarily private. Even festive waterfronts that use public space to generate capital gains for private developers offer a form of public-ness not available at the Navy Yard. But perhaps this is not a bad thing. The ubiquity of public access in waterfronts across the United States has made it more difficult to maintain those waterfronts as industrial zones for water-

dependent enterprises. The Philadelphia Naval Yard offers an alternative model that leverages the positive attributes of a waterfront location for a less public but more economically diverse and productive environment.

CHAPTER 5:

TOWARDS AN INTEGRATED

WATERFRONT

This thesis began with two questions about contemporary waterfront redevelopment practices: Can a city effectively integrate industrial use, new capital investment, and public open space on its waterfront through specific regulations and site design? And does this form of waterfront redevelopment present a viable and meaningful alternative to the standard development models of the past? These questions flowed from an analysis of four existing waterfront models and their inherent drawbacks. By closely examining the redevelopment of the Philadelphia Navy Yard, which sought in some ways to transcend these standard forms, the research shows that significant challenges remain for the integration of multiple functions and forms on the waterfront. However, the case also reveals some of the value generated in the attempt to break away from existing models. After revisiting the research questions, this concluding chapter argues that the preceding analysis exposes three overarching challenges of the integrated waterfront: mitigating conflicts in a mixed-use environment; reconciling the use of public space for private benefit; and designing edges within the site to minimize separation and uniformity. It also offers suggestions for ways in which this research might be adapted or expanded in the future, to explore some of the questions raised in more detail. Finally, the chapter concludes by revisiting the definition of the integrated

waterfront offered in the beginning of the thesis and assessing its viability as a future redevelopment model.

REVISITING THE RESEARCH QUESTIONS

Can a city effectively integrate industrial use, new capital investment, and public open space on its waterfront through specific regulations and site design?

The preceding chapters proved that while the Navy Yard provides space for each of these uses, they are not well integrated with one another. In attempting to achieve multiple goals for the Navy Yard, PIDC used the existing infrastructure and architecture of the site strategically, to allow for the maximum number and types of businesses while ensuring the minimum amount of conflict between them. Public open space has been used to anchor development and separate uses, and its design has not been geared toward bringing in outsiders. The size of the site and the relative sparseness of existing building stock allowed for this separation of uses and the flexible adaptation of the site for its various clients. It is attractive for both water-dependent and related industrial businesses and other non-industrial businesses, both because of site-specific amenities and because of particular economic policies PIDC has employed. Whether it will be as attractive for residents, and whether their presence will have the desired affect of bringing more commercial amenities is to be seen. It is possible that, just as the success of the commercial development within the Navy Yard led to a scaling back of planned public space along the waterfront, that successful residential development will lead PIDC to revisit its treatment of public space in general and the waterfront in particular.

*Does this form of waterfront redevelopment
present a viable and meaningful alternative to the
standard development models of the past?*

The Philadelphia Navy Yard has not accomplished the goal of the integrated waterfront in the way that I (and PIDC in its Master Plan) envisioned it, at least at this point in its development. The preceding chapters reveal three primary challenges to achieving the integrated waterfront at the Navy Yard: overcoming the conflicts of a mixed-use environment, using public land for private benefit, and designing edges within the site to minimize rather than emphasize separation and uniformity. Despite the mixed success of the Navy Yard in overcoming these challenges, the case proves that there is a waterfront development model that is not beholden to the public destination image of the waterfront that is so dominant in recent waterfront planning efforts. And in that way, it helps to diversify our understanding of what the waterfront can be.

MITIGATING CONFLICTS IN MIXED-USE ENVIRONMENTS

The standard forms of waterfronts described in the introduction – the forgotten, post-industrial waterfront; the industrial employment center; the pastoral, passive public park; and the festive, recreation destination – each allow for only one dominant use. These forms of waterfronts are reflective of mid-Century urban planning that embraced a strict separation of uses through zoning, as well as the monotony of appearance and use that it engenders. In the past fifteen to twenty years, however, those

planning ideals have shifted. Movements like New Urbanism, inspired by Jane Jacobs' writings from the 1960s that celebrated the spontaneity and vibrancy of traditional New York City neighborhoods, have brought "mixed use" into vogue in planning and development circles. When the 2004 Master Plan states that "the Navy Yard should develop, over time, as an urban mixed-use community, active 24 hours a day and 7 days a week," it expresses an intention popular in many, possibly all, redevelopment projects of recent years (PIDC 2004, 3). While this was the first planning principle listed in the Master Plan, efforts undertaken by PIDC and its partners since the Plan's release indicate a more singular vision of the space, one dominated by corporate use. These efforts include offering a range of financing options and tax incentives for new firms, providing business-friendly landscaping and infrastructure, and scaling back plans for more significant residential and recreational waterfront components.

The challenges of the mixed-use environment are greatest when trying to integrate traditional industrial and manufacturing uses with contemporary expectations for access and attractiveness. As the value of the waterfront has grown, water-dependent uses, like shipping or commercial fishing are increasingly threatened; the waterfront now encompasses not only production and transportation, but also consumption and recreation. In some cases the latter has come to fully supplant the former. Most waterfront dependent uses have very specific infrastructural needs (large dry docks, piers, cranes, etc.) that are not friendly to a publicly accessible waterfront design. Despite the popularity of the consumption-based waterfront, some cities are attempting to protect the water-dependent industrial uses and support the value they bring to maintaining a diverse economy. The Designated

Port Area in which the Boston Marine Industrial Park lies, for example, is protected by law as a zone for water-dependent uses. This preserves the working waterfront, but also has the effect of isolating these areas. In this way it adheres strongly to the industrial employment center standard waterfront form.

In some aspects, the Philadelphia Navy Yard follows this model. The shipyard, which features significant and specific industrial infrastructure and is the most explicitly water-dependent use within the Navy Yard, is separated from the commercial and potential residential districts, as well as from the public waterfront elements like the esplanade. Indeed, the shipyard was excluded from direct consideration in the 2004 Master Plan. Yet the shipyard is inextricable from the rest of the Navy Yard, not only due to its contributions to the diversity of the economic base of the site, but also in the value it gives to the surrounding development. The shipyard's industrial presence has become a central part of the appeal of the site, even for non-industrial tenants. As Mr. Berson of Liberty Property Trust put it:

“One of the things people love about the Navy Yard is the juxtaposition of visual imagery and context. So you have our new office buildings and you can go out on the balcony and look past the old officer's home – these charming, mansard roof brick buildings – and then you can see the basin with the ships and beyond the basins you see the shipyard and industrial component and you put all that together and it's not messy, it's exciting and so I think people like it.” (Berson 2012)

The industrial shipyard is thus an important visual component of the site and integral to its identity, despite the physical barriers in place that make it physically inaccessible to a visitor or non-shipyard Navy Yard worker. In this way, the Navy Yard has found

a way to bring the industrial waterfront out of isolation without sacrificing its productivity or security.

RECONCILING PUBLICLY OWNED PRIVATE SPACE

The Navy Yard has developed into a site that both traditional maritime industrial firms and service-sector business find attractive, yet it is still far from the “urban mixed-use community” it envisioned in the 2004 Master Plan. The most conspicuous element missing from the Navy Yard is residential; without it, the activity of the site is limited to working hours, not the 24-hour-a-day/7-day-a-week vibrancy advocated in the Plan. Both PIDC and Liberty Property Trust support the lifting of the deed restriction on residential use within the Navy Yard, yet they have pursued the option fairly slowly. Likewise, the public spaces that have received the most investment so far are those that anchor commercial real estate development – Crescent Park, the URBN campus, even the re-design and landscaping of the street network. The waterfront esplanade, meanwhile, is still under construction. Finally, PIDC and Liberty are making significant revisions to the design and purpose of the Marina District, changing it from a recreation destination for the city with surrounding residential uses to another commercial office zone. All of these decisions are indicative of the first priority of PIDC and its partners for the Navy Yard: (re)establish it as place of employment which can compete with suburban office parks that have lured away much of the city’s corporate tax base. This goal is not necessarily a bad one, but it does beg the question of how and why publicly owned land is developed and used for private gain.

In the case of the Navy Yard, many of the elements that contribute

to it feeling like a private rather than public space are a result of its former use. As an active military base, the separation from the rest of the city and the limited access points were essential to its purpose; the forms of the navy yard were so dominant, including both its structures and its gated nature, that repurposing them is extremely difficult. This attempt to overcome the existing form – through adaption, re-appropriation, or destruction – is relevant to many waterfront redevelopment projects, which often face particular infrastructural or historical impediments to their immediate integration with the rest of the city.

DESIGNING EDGES TO MINIMIZE SEPARATION AND UNIFORMITY

As the previous analysis indicated, the transformation of the Philadelphia Navy Yard into a mixed-use community is both helped and hindered by its previous use as a naval base. The infrastructure and architecture make it attractive to a diverse range of businesses, from an industrial shipbuilding conglomerate to a trendy clothing retailer. Yet it is cut off from the rest of the city by freeways and railroads. More troubling, the development plan for the Navy Yard emphasizes the separation of uses through the division of the site into districts. The site is thus characterized by hard, impenetrable edges that serve to emphasize rather than minimize the separation of uses and uniformity of design. One way in which these separations could be lessened, even without sacrificing the divisions that businesses desire for security, is to redesign the edges to be more variable and interesting. There three sections of the site where the edges are particularly impenetrable and unchanging (Figure 5.1). One, the northern boundary is necessarily impermeable, given the rail



Figure 5.1 Major Edges within the Navy Yard
(PIDC 2004, with author's additions)

yard and highway on the other side. But the other two, the shipyard edge and the waterfront edge, could be significantly improved by some relatively minor design interventions.

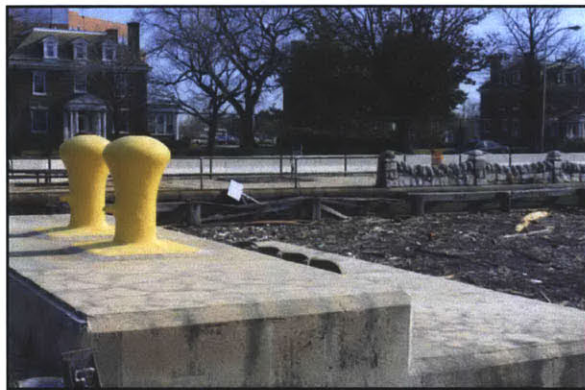


Figure 5.2 Edge Condition of the Shipyard
(Author's Photo)

Due to the safety and security concerns of the businesses that operate in the shipyard, access to the area is restricted. While the side of the street adjacent to the historic core and the corporate center is permeable and landscaped, the side adjacent to the shipyard is simply a chain-link fence (Figure 5.2). Rather than treat this edge as an afterthought, PIDC should take advantage of the interest in industrial activity to create a more engaging demarcation. As the quote from Mr. Berson used above indicates, there is value in maintaining some accessibility – visual, if not physical – to the industrial, working waterfront. PIDC could emphasize this attraction by using creative materials to form the barrier. Using imaginative fencing or unusual landscaping techniques could make the edge appear more permeable than it is without sacrificing the security demanded by the businesses within (Figure 5.3).

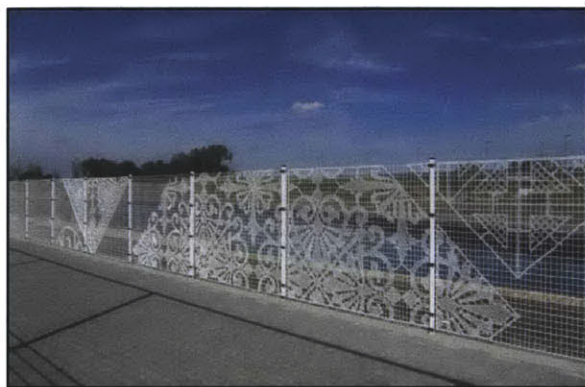


Figure 5.3 Alternative Fencing Example
(www.demakersvan.com)

The waterfront edge is the second important edge within the Navy Yard. In the 2004 Master Plan, PIDC outlined two distinct waterfront edge conditions. In the Marina district, the edge incorporated a boardwalk and constructed wetlands, with a soft sloping edge (Figure 5.4). The concept for the riverfront esplanade featured a multi-use trail with

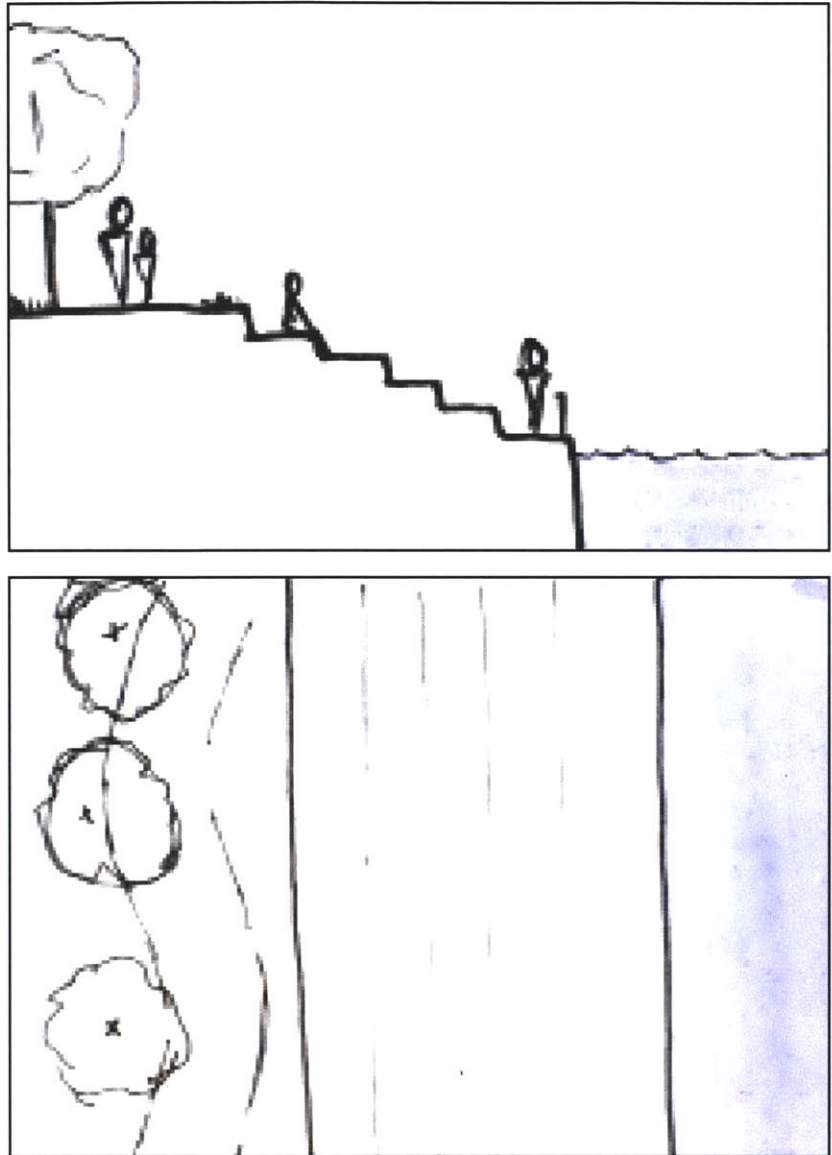
a constructed edge and permanent fixed guardrail (Figure 5.5). PIDC's decision to abandon the marina district should not limit the 2+ miles of water's edge in the Navy Yard to an unvarying waterfront path. Indeed, even if PIDC does intend to main the hard seawall edge along the entire waterfront (as Graham Wyatt indicated), there are a number of options for how the location might be made more valuable and environmentally responsive by incorporating diverse design elements. Three possibilities are described below:



Figure 5.4 Waterfront Edge in Proposed Marina District (PIDC 2004, 49)

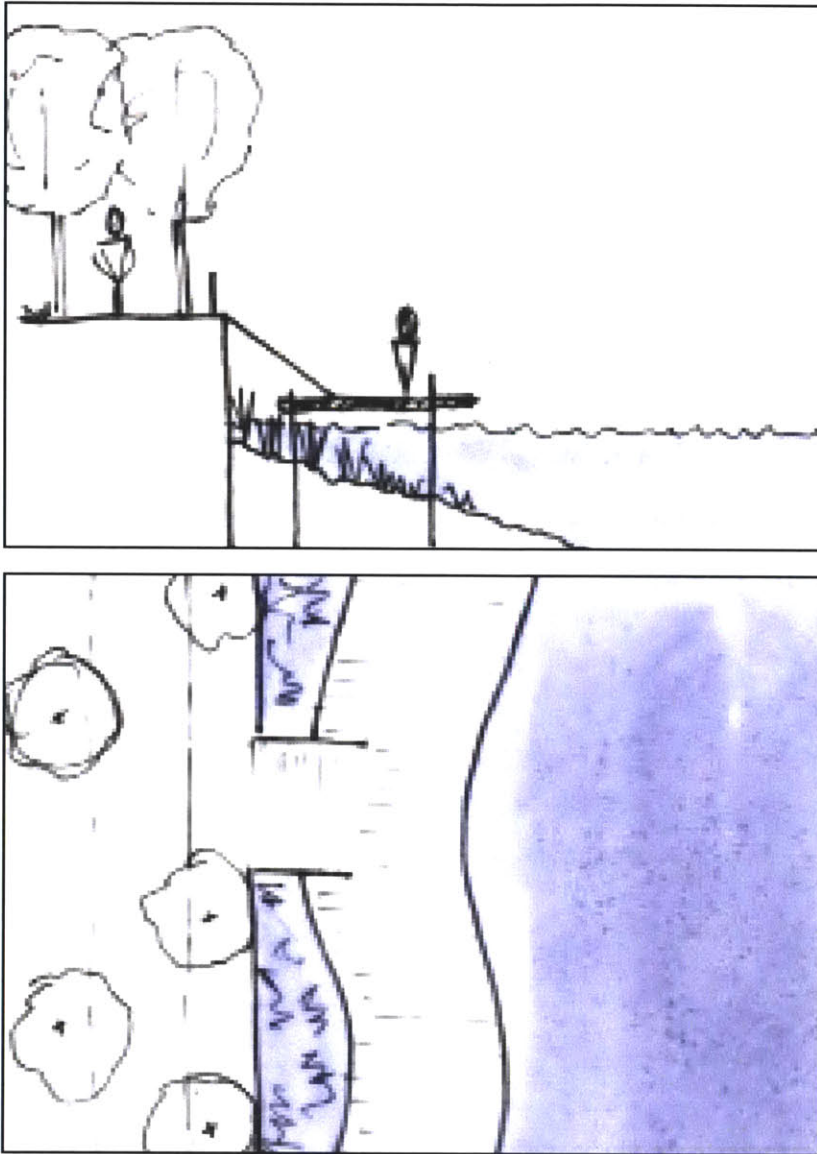


Figure 5.5 Waterfront Edge along Riverfront Esplanade (PIDC 2004, 82)



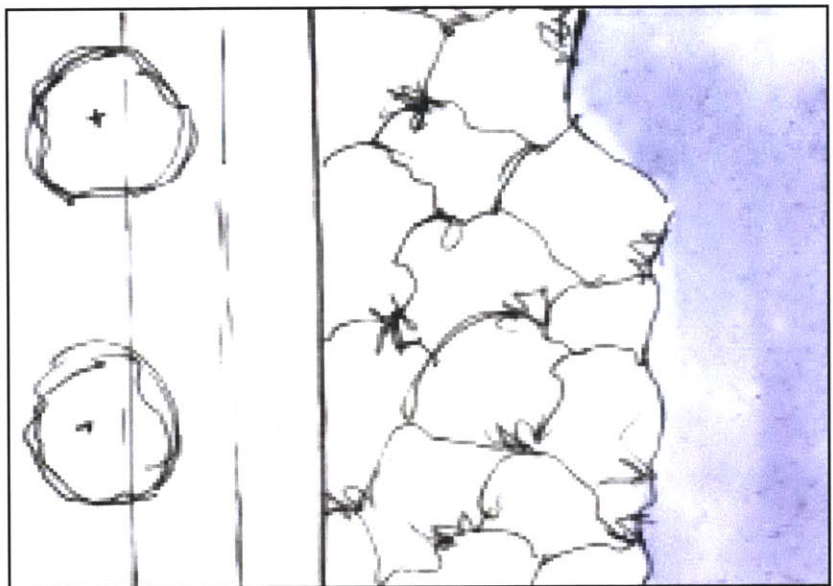
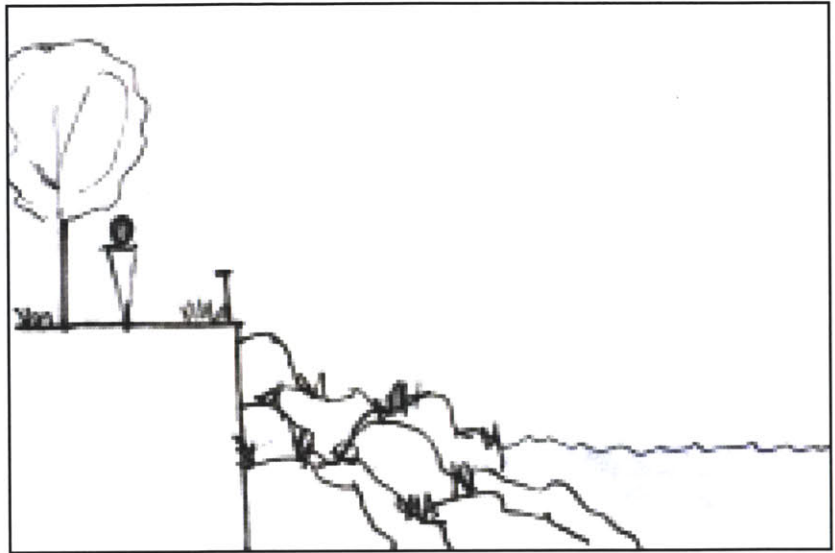
Edge 1: Theater-style (Figures 5.6 and 5.7)

- Hard seawall maintained, but brought close to water's level (at highest tide)
- Seating and fishing areas incorporated on different levels
- Dynamic interaction with the water provided for visitors



Edge 2: Boardwalk (Figures 5.8 and 5.9)

- Hard seawall maintained with ramps to parallel boardwalk
- Winding boardwalk provides variable waterfront experience and access to water
- Space for ecological wetlands; could incorporate some public education element



Edge 3: Rocky Edge (Figures 5.10 and 5.11)

- Hard seawall maintained
- Rocky sloping edge that can support plant life, diversify river ecology
- Makes tidal changes more visible; could incorporate some public education element

These three possibilities are neither exhaustive nor mutually exclusive. Ideally they would be combined in some form in order to ensure a variation of materials, patterns, and experiences along the waterfront trail. The point is merely to illustrate that the most important public amenity of the site should be treated with sensitivity and creativity, and that such an investment is possible even without transforming the waterfront into the festival destination.

POTENTIAL FUTURE RESEARCH

The redevelopment of the Philadelphia Navy Yard operated under a set of specific conditions and circumstances that make it somewhat difficult to apply its lessons to potential future redevelopment projects. The wave of military base closures in the past two decades provided cities with an unprecedented amount of publicly owned land to repurpose as they chose. Without that kind of significant land exchange, it is unlikely that cities will have the kind of opportunity Philadelphia had to experiment with such a large and cohesive site. With that in mind, it is useful to consider how this study of a particular, and perhaps unique, waterfront redevelopment project might inspire and inform future research efforts.

The Philadelphia Navy Yard is an ongoing development project. As this research has revealed, the intended use and design of the site has undergone significant transformation over the past two decades. It is more than likely that this pattern of responsive adaptation of the site's purpose and configuration will continue. Certainly it would be worth revisiting this research when/if the deed restriction on residential development is lifted. Does the

addition of residential use stimulate the development of other commercial amenities, as PIDC and Liberty Property Trust anticipate? How does the addition of permanent residents affect the form and operation of the site, particularly the size, scope, and programming of public space? Such a study might be particularly valuable as other single-use sites, such as suburban office parks, begin to accommodate other uses and must adapt their site plans accordingly.

In terms of waterfront redevelopment more broadly, this research suggests that there is still value in maintaining the waterfront for water-dependent industrial uses. Yet even as some of the smaller manufacturing firms within the Navy Yard have seen their business expand, Kvaerner, the shipbuilding firm, has needed near continuous financial support from the public. How will the Navy Yard adapt if the shipyard portion fails? Can it be repurposed and integrated into the rest of the site? What would this mean for the many smaller manufacturing businesses within the site, and for the blue-collar workforce more generally? Some cities and states have put regulatory controls in place to protect the working waterfront, such as the Designated Port Areas in Massachusetts or New York City's recent adoption of Vision2020 for their waterfront, which includes an explicit goal of protecting maritime uses. A more focused study on whether cities and states should maintain industrial uses, even under adverse economic conditions, and if so how they can accomplish this would be worthwhile.

THE FUTURE OF THE INTEGRATED WATERFRONT

In the introduction to this thesis, I offered an alternative to the four standard waterfront forms that have made waterfront redevelopment projects so monotonous. I called this the integrated waterfront, and argued that it offers more diverse understanding of what the waterfront can be. By blending elements of the forgotten, working, open, and festive waterfront models, the integrated waterfront has the potential to be place of discovery, creation, and enjoyment. It allows the multiple advantages of the waterfront to benefit an equally wide range of users. It is thus a valuable alternative to the standard forms because it offers both a diversity of economic functions and urban place-making amenities. The Philadelphia Navy Yard, as it has developed over the past two decades, reveals both the inherent challenges of this model and its potential. Rather than using the advantages of the waterfront to serve the broadest cross-section of Philadelphia's community, the Navy Yard's waterfront is used primarily to add value to industrial and corporate office development. Likewise, there is not a perfect balance, in terms of allocated space or desegregated design, among the different uses; uses are still separated from one another physically and the site design is uninspired, recalling too easily the suburban office parks it wants to replace. Finally, while new capital investment has been a bigger priority for PIDC and its partners than either industrial development or public open space provision, the Philadelphia Navy Yard is more economically diverse than most waterfronts. After more than a decade of redevelopment and investment, the number of workers employed at the Navy Yard has surpassed the number it had when it closed as a naval base in the early 1990s; more importantly, those workers are employed

in a range of industries and sectors, including traditional manufacturing, creative production, and high-technology research and development, which is promising for the long term economic growth of the Navy Yard and the city of Philadelphia.

The mixed success of the Navy Yard suggests not only the challenges of the integrated waterfront model, but also the limitations of planning more generally. Planning is often thought of as an anticipatory act: planners organize a site in order to achieve a certain expected vision. The 2004 Master Plan certainly fulfills that role. It envisioned a future for the 1200-acre waterfront site that was substantially different from its then-current state: a mixed-use, vibrant community that would serve a broad cross-section of users. The Plan articulated a wide range of goals – sustain the traditional shipyard, bring in new commercial capital investment, and create a waterfront destination for the city. Yet the plan failed to anticipate how the success of one of these goals might impede the realization of the others. The primary goal of PIDC and its partners was always to grow the Navy Yard as a place for jobs and so they prioritized commercial development over other waterfront functions. They sacrificed the vision of the Plan to respond to the market. The forthcoming update to the Master Plan is responsive, rather than anticipatory, and therefore friendlier to the capital-driven American development context.

Waterfront redevelopment over the past half-century has resulted in a series of places that look and function alike, such that each successive project is expected to fit within the existing paradigms. Because the waterfront is such a powerful place – “the most visible space for the creation of meaning” as one waterfront scholar argued – restricting its physical form and economic

function is severely limiting for the city's growth and identity. The purpose of the integrated waterfront is to allow one of the most visible and powerful spaces of the city to have a diversity of meanings. While the Philadelphia Navy Yard has not wholly met this goal, its continuing development shows its potential for future waterfront developments.

BIBLIOGRAPHY

- Bissinger, Buzz. 1997. *A Prayer for the City*. New York, NY: Random House.
- Boston Marine Industrial Park. 2012. "History of the Park." Accessed March 2. <http://www.bostonmarineindustrialpark.com/about/history-of-the-park/>.
- Breen, Ann and Dick Rigby. 1996. *The New Waterfront: A Worldwide Urban Success Story*. New York, NY: McGraw-Hill.
- Brenner, Neil and David Wachsmuth. 2012. "Territorial Competitiveness: Lineages, Practices, Ideologies." In *History of Planning Ideas*, Bish Sanyal, Lawrence Vale, and Tina Rosen, eds. Cambridge, MA: MIT Press.
- Brownill, Sue. 2011. "London Docklands Revisited: The Dynamics of Waterfront Development." In *Transforming Urban Waterfronts: Fixity and Flow*, edited by Gene Desfor, Jennefer Laidley, Quentin Stevens and Dirk Schubert, 121-142. New York, NY: Routledge.
- Capital Riverfront Development DC. 2012. "The Yards." Accessed March 2. <http://www.dcyards.com/>.
- Defense Base Closure and Realignment Commission. 1991. *Report to the President*. Washington, DC: Government Printing Office.
- Desfor, Gene and Jennefer Laidley. 2011. "Introduction: Fixity and Flow of Urban Waterfront Change." In *Transforming Urban Waterfronts: Fixity and Flow*, edited by Gene Desfor, Jennifer Laidley, Quentin Stevens and Dirk Schubert, 1-13. New York, NY: Routledge.
- Doig, Will. 2012. "On the waterfront, the battle rages on." *Salon.com*, March 10. http://www.salon.com/2012/03/10/on_the_waterfront_the_battle_rages_on/.
- Dowart, Jeffery M. 2001. *The Philadelphia Navy Yard: From the Birth of the U.S. Navy to the Nuclear Age*. Philadelphia, PA: University of Pennsylvania Press.
- Economic Development and Industrial Corporation of Boston. 1975. *Economic Development Plan for the Boston Marine Industrial Park Formerly the South Boston Naval Annex*. November 1975.
- Florida, Richard. 2003. "Cities and the Creative Class." *City and Community*. 2: 3-19.
- Frieden, Bernard J. and Christie I. Baxter. 2000. "From Barracks to Business: The M.I.T. Report on Base Redevelopment." Economic Development Administration, U.S. Department of Commerce.

- Ginsberg, Thomas and Henry J. Holcomb. 2007. "Tasty Baking to move business to Navy Yard." *Philadelphia Inquirer*, May 9, 2007.
- Gorenstein, Nathan. 1997. "Deal in Works to Reopen Navy Yard." *Philadelphia Inquirer*, September 28, 1997.
- Hess, Ron, Marquis Jefferson P., John F. Schank, and Malcolm MacKinnon. 2001 *The Closing and Reuse of the Philadelphia Naval Shipyard*. National Defense Research Institute. Santa Monica, CA: RAND.
- Hill, Miriam. 2011. "GlaxoSmithKline moving to new home in Navy Yard." *Philadelphia Inquirer*, February 9, 2011.
- Hoyle, B.S., D.A. Pinder, and M.S. Husain. 1988. *Revitalizing the Waterfront: International Dimensions of Dockland Development*. London: Belhaven Press.
- Lane, Robert. 1998. "The Place of Industry." *Harvard Architecture Review*. Vol. 10: 150-161.
- Lloyd, Linda. 2011. "PA Oks \$42 million for Aker shipyard." *Philadelphia Inquirer*, February 18, 2011.
- Malone, Patrick. 1996. "Introduction." In *City, Capital and Water*, ed. Patrick Malone, 1-14. London: Routledge.
- Marder, Diana. 1997. "Smooth Sailing for Shipyard Deal." *Philadelphia Inquirer*, December 12, 1997.
- Marshall, Richard. 2001. "Contemporary Urban Space-Making at the Water's Edge" in *Waterfronts in Post-Industrial Cities*, Richard Marshall, ed. New York, NY: Spon Press.
- McGahey, Richard M. 2008. "Regional Economic Development in Theory and Practice." In *Retooling for Growth: Building a 21st Century Economy in America's Older Industrial Areas*, eds. Richard M. McGahey and Jennifer S. Vey, 3-32. Washington, DC: Brookings Institutions Press.
- Mozingo, Louise A. 2011. *Pastoral Capitalism: A History of Suburban Corporate Landscapes*. Cambridge, MA: MIT Press.
- Parsons Brinckerhoff. 2008. *Broad Street Line Extension Feasibility Study: Executive Summary*. Accessed February 2012. http://www.navyyard.org/userfiles/file/Final_BSL_Exec_Sum_LR.pdf
- Peters, Alan and Peter Fisher. 2004. "The Failures of Economic Development Incentives." *Journal of the American Planning Association* 70 (Winter): 27-37.

Philadelphia Industrial Development Corporation. 2011. "Navy Yard Incentives." Last modified 2011. <http://www.navyyard.org/incentives>.

Philadelphia Industrial Development Corporation, Liberty Property Trust, Synterra Partners, and Robert A.M. Stern Architects. 2004. *Philadelphia Navy Yard Master Plan*. Philadelphia: PIDC.

"Philadelphia Navy Yard Again Staves Off Knife." 1985. *The New York Times*, May 17, 1985.

Philadelphia Office of Defense Conversion. *League Island: An Environment of Innovation (Community Reuse Plan for the Philadelphia Naval Base and Shipyard)*. September 1994.

Porter, Michael. 2000. "Location, Competition, and Economic Development: Local Clusters in a Global Economy." *Economic Development Quarterly*. Vol. 14: 15-34.

Rodwin, Lloyd. 1989. "Deindustrialization and regional economic transformation" in *Deindustrialization and Regional Economic Transformation: the Experience of the United States*. Lloyd Rodwin and Hidehiko Sazanami, eds. Wincheester, MA: Unwin Hyman.

Saffron, Inga. 2011. "What does GlaxoSmithKline's move to the Navy Yard mean for downtown?" *Philadelphia Inquirer*, February 18, 2011.

Shaw, Barry. 2001. "History at the Water's Edge." In *Waterfronts in Post-Industrial Cities*, edited by Richard Marshall, 160-172. New York, NY: Spon Press.

PERSONAL INTERVIEWS

Berson, Brian. Interview with author. Philadelphia, PA, February 13, 2012.

Grady, John. Interview by author. Philadelphia, PA, January 24, 2012.

Hare, Joe. Interview by author. Philadelphia, PA. February 14, 2012.

Seltzer, Mark. Phone Interview by author. Cambridge, MA/Philadelphia, PA, April 3, 2012.

Wyatt, Graham. Interview by author. New York, NY, February 21, 2012.

Ziel, David. Interview by author. Philadelphia, PA, February 14, 2012.